MARCH 8, 1954

Passenger Cars for the UP . . . p. 58

RAILWAY AGE

The Standard Railroad WEEKLY for Almost a Century

IN THIS ISSUE

HERE'S HOW TO OPERATE ON A 40 HOUR WEEK

. . . AND LIKE IT!

With shop and maintenance personnel off the job during week-ends, mechanical servicing on hot-shot freight schedules is a real problem.

Because a high percentage of road delays is due to brake beam troubles requiring brake head changes—Truslock's *quick-change at the car* brake head keeps top priority lading rolling. Changing a Truslock brake head is a stop watch operation, completed in a matter of minutes—not a brake beam removal project requiring jacking of the car.

Now—reduced week-end maintenance crews can change brake heads—quick and easy—just as they change brake shoes, while the rest of the gang's out fishing.

The 5-day week is here to stay. Let's live with it—and like it.

TRUSLOCK — THE **PREMIUM** MAINTENANCE BRAKE BEAM

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NEW YORK • BUFFALO • HAMILTON, ONT.

SAFE · FAST · DEPENDABLE

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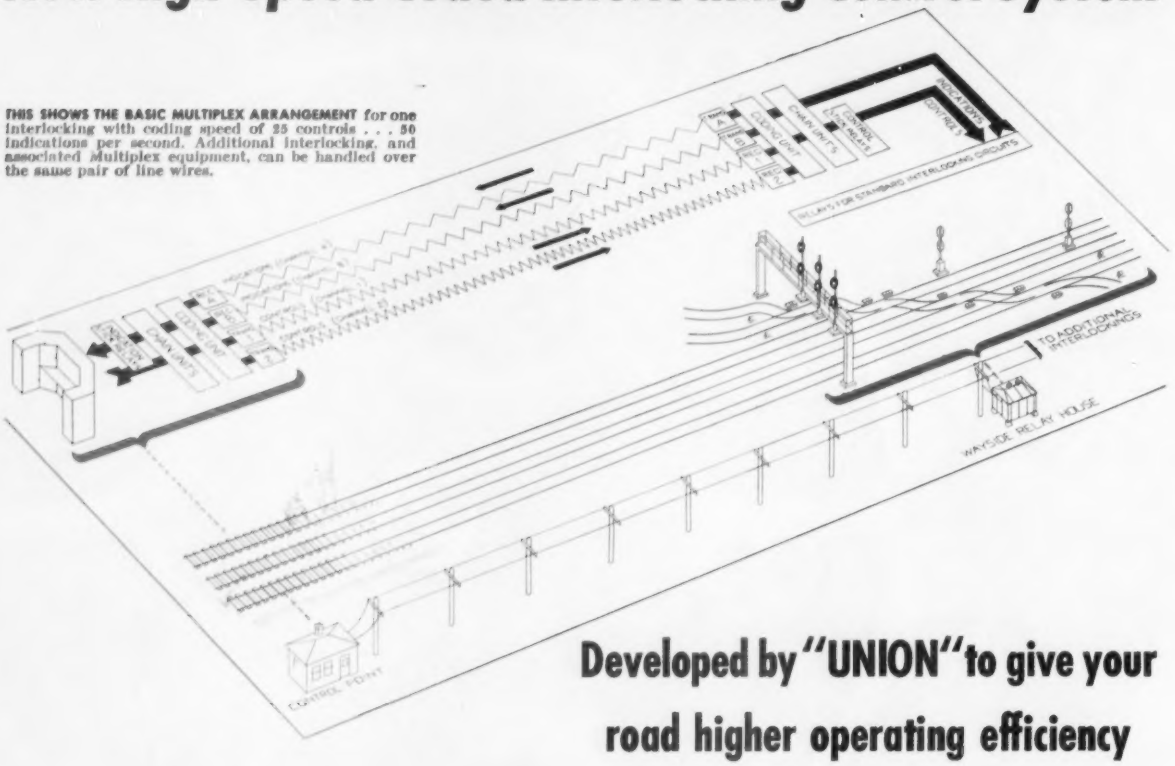
power hand brake

D-3290-XL

W. H. MINER, INC. CHICAGO

New High-Speed Coded Interlocking Control System



THIS SHOWS THE BASIC MULTIPLEX ARRANGEMENT for one interlocking with coding speed of 25 controls . . . 50 indications per second. Additional interlocking, and associated Multiplex equipment, can be handled over the same pair of line wires.

Developed by "UNION" to give your road higher operating efficiency

"UNION" Multiplex Code Control System

THE MULTIPLEX CODE CONTROL SYSTEM uses standard Style C or UR control machines.

ARE you planning to build a new remotely-controlled interlocking . . . modernize an older one . . . or consolidate present interlockings for greater economies? If you are, consider these features of the new "Union" Multiplex Code Control System:

- It's the fastest all-relay coded interlocking control system yet developed.
- Basic system transmits 25 controls and 50 indications per second. Can be expanded in multiples of 25 controls and 50 indications per second, such as 50 and 100 per second . . . 75 and 150 per second . . . *simultaneously* over one pair of line wires.
- Each code can contain complete control and indication information for all functions at the interlocking . . . therefore a complete route can be set up with one code.

The "Union" Multiplex Code Control System is designed especially for large and busy interlockings. May we tell you the rest of the story?

UNION SWITCH & SIGNAL

DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

SWISSVALE PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

RAILWAY AGE

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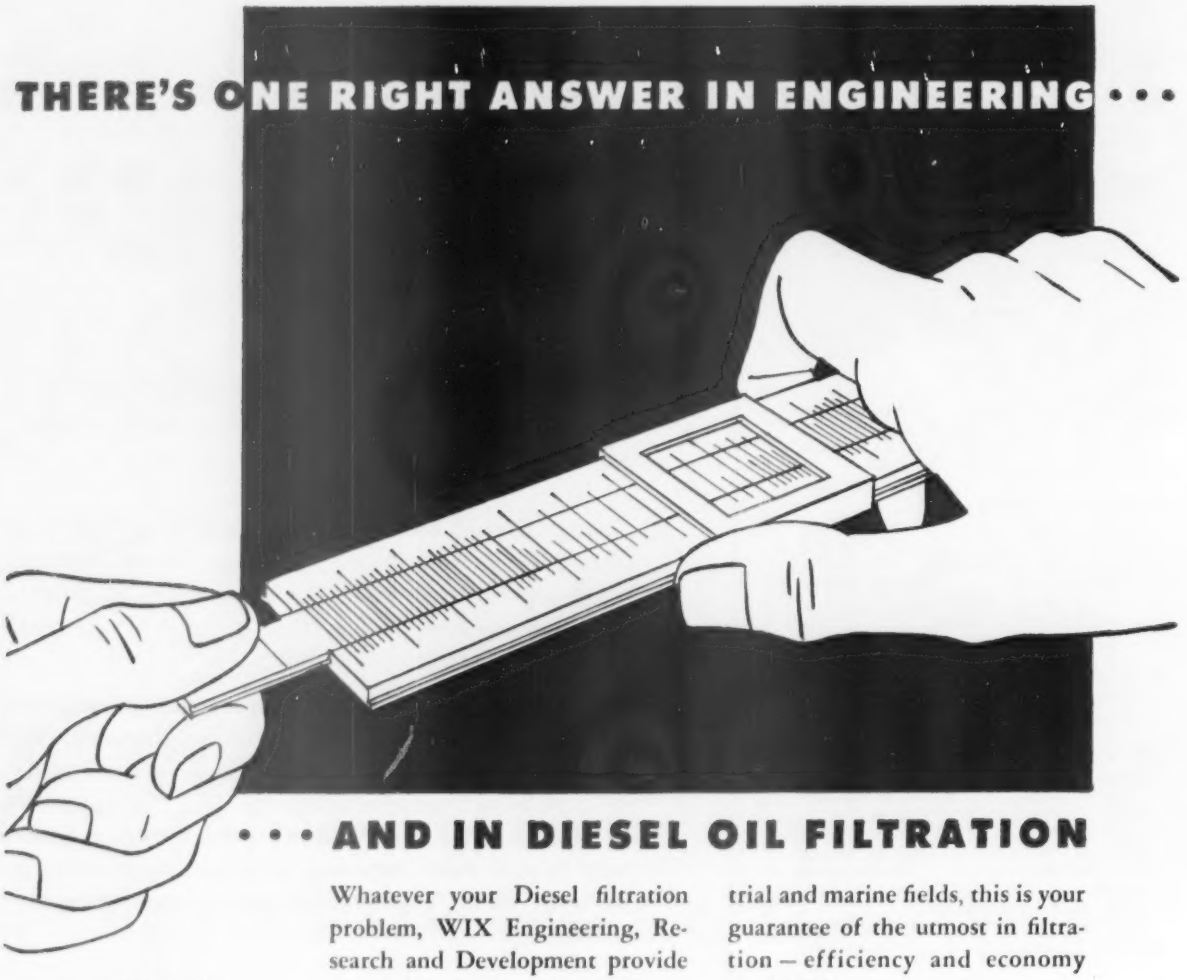
March 8, 1954 **Vol. 136, No. 10**

Week at a Glance

THERE'S ONE RIGHT ANSWER IN ENGINEERING • • •



• • • AND IN DIESEL OIL FILTRATION

Whatever your Diesel filtration problem, WIX Engineering, Research and Development provide the right answer with slide-rule precision. For fuel or lube oil, yard engine or main line locomotive, varying operating or climatic conditions, WIX Oil Filter Cartridges stand out in quality and service.

WIX performs all manufacturing operations, carefully supervises every step from raw material to finished Product. Supported by extensive Laboratory facilities and constant field testing, and with the benefit of many years' experience in the railroad, automotive, industrial and marine fields, this is your guarantee of the utmost in filtration – efficiency and economy combined.

Tested WIX Filtrants keep oil cleaner for far longer periods. WIX Engineered Cartridge construction assures precise fit, ease of installation and extended service. And, WIX warehouse stocks provide convenient, immediate service.

Let WIX Engineering solve your filtration problems with Cartridges designed for the conditions under which your Diesels operate. Write for complete information today.

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Selection of "Prescription" Filtrants: Cotton Threads, Blended Cotton Threads, Felted Paper.

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Uniform volume, density packed in one-piece Sock. Integral End-Seal or Grip-Seal Cartridge construction.

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Spring-reinforced center tube, slotted for greater, more even flow rates.

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Tin-plated metal parts. Bale-type handles for easy installation and servicing.

ENGINEERED wix FILTRATION

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WAREHOUSES

GASTONIA • NEW YORK • SACRAMENTO
ATLANTA • DES MOINES • ST. LOUIS

Current Statistics

Operating revenues, twelve months	
1953	$10,664,317,337
1952	10,581,598,621
Operating expenses, twelve months	
1953	$ 8,135,476,779
1952	8,053,159,011
Taxes, twelve months	
1953	$ 1,184,857,140
1952	1,261,904,149
Net railway operating income, twelve months	
1953	$ 1,109,434,340
1952	1,078,312,684
Net income, estimated, twelve months	
1953	$ 875,000,000
1952	836,000,000
Average price railroad stocks	
March 2, 1954	61.71
March 3, 1953	68.70
Carloadings, revenue freight	
Eight weeks, 1954	4,834,035
Eight weeks, 1953	5,412,688
Average daily freight car surplus	
Week ended February 27, 1954	120,622
Week ended February 28, 1953	69,648
Average daily freight car shortage	
Week ended February 27, 1954	318
Week ended February 28, 1953	1,170
Freight cars delivered	
January 1954	4,944
January 1953	7,981
Freight cars on order	
February 1, 1954	27,959
February 1, 1953	77,414

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Departments

Week at a Glance CONTINUED

BRIEFS

A bill to amend the Locomotive Inspection Act, and pave the way for further consolidation of I. C. C. bureaus, has been introduced in Congress. The I.C.C. is behind the move, which will be solidly opposed by the labor organizations.

Motion for a new trial in the Nebraska union shop case (*Railway Age*, January 25, page 14) has been denied and the unions have filed an appeal to the state's supreme court. The case, involving a clash between the union shop clause of the amended Railway Labor Act and Nebraska's "right-to-work" amendment to its constitution, was the first decision rendered among the 15 similar cases now pending in various states. In it, the Nebraska law was upheld.

Good Crops in 1953 and New Industrial Progress Boost Midwest Prosperity

1953 was another year of bountiful harvests in the Great Midwest, served since 1871 by

THE MINNEAPOLIS & ST. LOUIS RAILWAY

And the new wealth from fertile farms has combined with new industrial progress to create new prosperity in America's No. 1 agricultural region, which also has become a great empire of diversified industry.

This rapid industrial development, built on a century-old supremacy in farm production, makes the Midwest an ideal location for business and industry. More and more manufacturers and distributors in many lines know all this.

LAND OF INDUSTRIAL OPPORTUNITY

The M. & St. L. serves some 225 cities and towns in four Midwest States. In dozens of these, the M. & St. L. offers sites, advantageous from every point of view, for new factories and warehouses; or for industries seeking to relocate or expand.

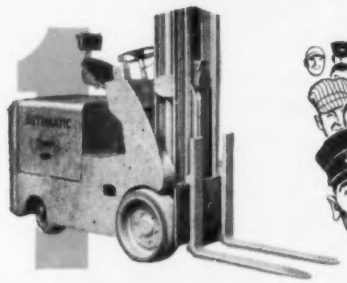
Here are figures to show the agricultural riches produced in 1953 by the four M. & St. L. States, Minnesota, Iowa, Illinois and South Dakota. In 1953, according to the U.S.D.A., their big although not record harvests included 1,485,527,000 bushels of corn or 46% of the country's crop; 525,876,000 bushels or 43% of the oats; 140,494,000 or 53% of the soybeans; 15,767,000 bushels or 42% of the flaxseed; 5,526,000 or 30% of the rye; 22,702,000 tons or 21% of the hay; and as always vast quantities of other cash and feed crops.

The **MINNEAPOLIS & ST. LOUIS** *Railway*

FAST FREIGHT SERVICE IN THE MIDWEST

5 Big Reasons

FOR Automatic's POPULARITY WITH RAILROAD MEN

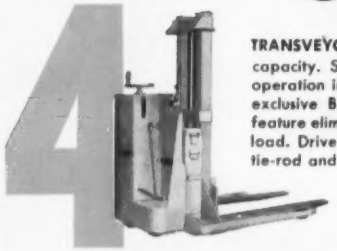


SKYLIFT—BF model is furnished in capacities from 1,500 pounds to 4,000 pounds, rated for loads up to 48" long. With a collapsed height of 83", telescopic lift is 132" and single lift 68".

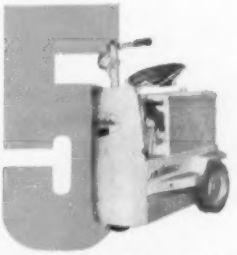
LOAD CARRYING PLATFORM TRUCK—FP-20. All-purpose platform trucks with large area fixed platform, for variety loading or freight transfer, can be supplied in capacities from 2,000 pounds to 6,000 pounds.

TRANSPORTER (Pallet). Both 4,000 pound and 6,000 pound capacity models of the pallet type "101" Transporter are furnished with forks from 30" long and up in 2" steps, suitable for use with open face or double face pallets. Width over forks is 27".

Automatic offers the widest selection of electric-driven industrial trucks for Railway purposes



TRANSVEYOR (Stacker Truck)—4,000 lbs. capacity. Short, compact, maneuverable...for operation in narrow and congested areas. Has exclusive Balanced Action! This center-pivoted feature eliminates frame distortion and equalizes load. Drive and idler wheel are connected by tie-rod and steer simultaneously.



TRACTOR—On FT-E Center Control model driver sits while on FT-E end control model driver stands at rear. Either will draw trailer load of 14,000 pounds all day, or up to 38,000 pounds short distances, intermittently. Normal drawbar pull capacity of both types is 250 pounds, with an ultimate of 950 pounds.

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WORLD'S LARGEST EXCLUSIVE BUILDER OF ELECTRIC-DRIVEN INDUSTRIAL TRUCKS

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*City*_____ *Zone*____ *State*_____

NYC Asks I.C.C. to Probe Young

Would determine whether Alleghany Corporation continues "directly or indirectly" to control C&O

The New York Central has asked the Interstate Commerce Commission for an investigation into recent activities of Robert R. Young and his personal and corporate allies in connection with Mr. Young's campaign to obtain control of the Central.

The Central petitioned the I.C.C. to determine:

(1) Whether Alleghany Corporation, controlled by Mr. Young, continues "directly or indirectly" to control the Chesapeake & Ohio, of which Cyrus S. Eaton has been chairman since January;

(2) Whether C&O's "purported sale" to Clinton W. Murchison and Sid W. Richardson of 800,000 shares of Central stock failed to comply with requirements of a trust agreement under an I.C.C. order; and

(3) Whether Alleghany has "any voting stocks of carrier corporations" which "should be placed in trust and which have not been so trusteed."

"Purported Sale"—"The purported sale of these 800,000 shares to Murchison and Richardson at this particular time, in view of the statement by Eaton in January of this year just following his election as chairman of the board of C&O that C&O would continue to hold this stock and that the investment in Central had great possibilities for the future, certainly leaves little doubt as to Young's and Alleghany's continued influence in C&O affairs and as to the fact that Eaton does Young's bidding or that they are acting in concert," the Central stated in its petition.

"Eaton's power over C&O affairs is demonstrated by the fact that release of these shares under the sale provision of the trust agreement was requested prior to action by the board of directors of C&O in respect of the purported sale but pursuant to a certificate which must have recited that the shares 'have been sold.' "

Other Questions — The Central asked the I.C.C. to determine:

(1) "Whether the purported sale was made for cash; (2) whether C&O disposed of the stock entirely or partly on credit and took notes or other evidences of indebtedness for the purchase price; (3) whether there is any pledge or other lien interest remaining in C&O; (4) whether any part of any money paid for the stock was borrowed from Alleghany, which has advanced money in the past to Murchison and, we are informed, is at present a creditor of his, or from Young or others affiliated with them; and (5) whether the purported purchase was made by Murchison and Richardson with a guarantee from Young or Alleghany or others affiliated with them, against loss, a type of transaction which, we are informed, in the past has been entered into between Murchison and Alleghany, and which we believe still exists between them."

"There can be no question," declared the Central, "but that the purported sale was intended to be of great advantage to Young in his ambitions as to Central. That Eaton took this action risking extensive criticism and litigation by C&O stockholders and heavy damages (and without previous board action) is conclusive of the fact that the relations between Young and Eaton in these matters go far beyond the bounds of mere friendship."

The Central noted that "C&O could have kept the Central stock and voted it itself had it been able to show to the commission that Alleghany no longer controlled C&O and obtain a finding to that effect. Despite Eaton's statement as to the great possibilities of this investment, the stock was disposed of to two friends of Young and business associates of his and Alleghany.

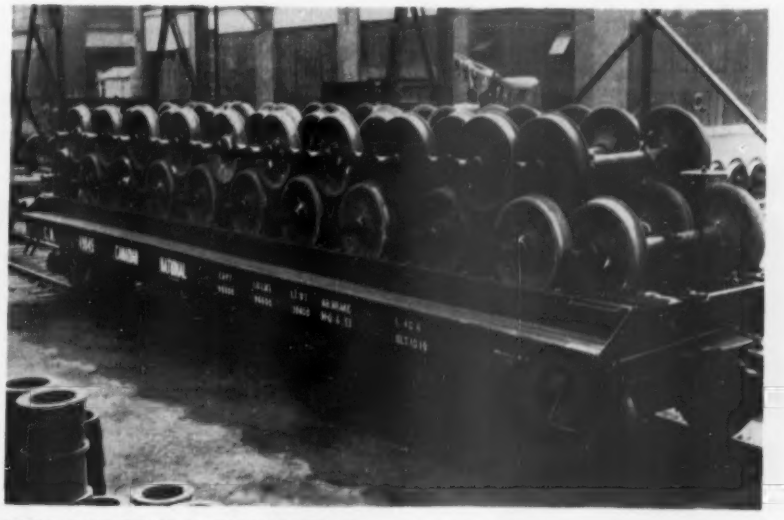
"Murchison and his group have recently become co-owners with Alleghany of Investors Diversified Services, Inc., and are engaged in several 'joint ventures' with Alleghany and Young. Both Murchison and Richardson are large owners of securities of Missouri Pacific Railroad Company, which for many years has been a major railroad interest of Young and Alleghany. . . . Undoubtedly, Murchison and Richardson have other business relationships, direct and indirect, with Alleghany and Young which the investigatory processes of the commission would reveal."

Important to Know — Regarding ties between Mr. Young and Alleghany, on one hand, and Mr. Eaton and C&O on the other, the Central said it is "important" to know:

(1) "How many of the present directors were named by the last Alleghany-controlled board; (2) who in addition to Eaton selected all or any of the new directors or participated in their selection; (3) who chose Eaton to purchase the last

HOW TO GET MR. BROWN'S $500

March 31 is the closing date in the contest for the best definition of the "inherent advantages" of railroad transportation — with the winner to receive an award of $500, offered by Warren W. Brown, president of the Monon. Terms and conditions for the contest were announced in *Railway Age* January 18, page 13.



THIS CANADIAN NATIONAL FLAT-CAR, specially constructed at the road's Point St. Charles shops in Montreal, permits double-tier loading of mounted wheels. Twenty pairs of wheels can be carried on the first tier of the car and 18 additional pairs on the second tier.

C&O stock owned by Alleghany and to become chairman of the board of C&O with the president of C&O subject to his control; and (4) who interested Eaton in C&O in the first place when he bought his first block of 100,000 shares of C&O stock from Alleghany?"

The Central also said it would be important to know "whether Eaton's advent in the C&O was accompanied by any informal understanding as to what would be done with regard to the 800,000 shares of Central stock owned by the C&O and trusteed with the Chase National Bank or that such stock would be dealt with to further Young's ambitions in respect to Central."

New Directors Proposed—Meanwhile, the first seven of Mr. Young's candidates for election to the NYC board have been announced. In addition to Messrs. Young, Kirby, Murchison and Richardson, they are: D. E. Taylor, president of the West India Fruit & Steamship Co.; R. Walter Graham, physician and investor; and E. T. Smith, a member of the New York Stock Exchange. The last three were said by an Alleghany spokesman to have "large holdings" of NYC stock, "any one of which will be larger than the largest single holding" represented on the road's present board. The announcement listed Mr. Murchison and Mr. Richardson as holding 400,000 shares apiece; Mr. Young, 100,200; and Mr. Kirby, 100,000.

Reorganization Fringe Costs Worry Mitchell

Creation of a large number of committees representing small interests is an unnecessary expense in reorganization proceedings, at least in the opinion of Interstate Commerce Commissioner Mitchell.

Division 4 recently authorized a committee of Missouri Pacific preferred stockholders to solicit contributions from other stockholders to help finance the committee's work.

Commissioner Mitchell filed a strong dissent. He said he could see no reason why a committee "with as little work as this" should be paying $200 a month to a secretary, plus travel expenses.

"Certainly the parties involved in reorganization should have proper representation, but that does not mean that every individual or every director or every clique can organize its own committee and then look to the estate, in the end, to pay the committee's expenses and large fees. It is time this commission put an end to that kind of procedure," he declared.

Traffic

"Let Rails Enter Trucking!"

Shippers say railroads should have same right as any other applicant to enter field of motor trucking

Railroads, or their subsidiaries, should be given the right to enter the field of motor trucking on the same basis as any other applicant, and changes in regulatory law should be made to bring this about.

That's the majority opinion of industrial traffic managers and chamber of commerce traffic directors, coast to coast, as expressed in the monthly traffic poll of *Railway Age's* companion publication, *Railway Freight Traffic*.

The actual vote favoring regulatory changes to increase the scope of railroad operation was better than two to one. Reasons given by members of this majority group included these:

- There is too much discrimination against railroads at present.
- Regulatory changes would benefit shippers and give them more opportunity to choose carrier service.
- Considerable trackage, now unproductive, could be abandoned.
- The "independent attitude" of many truckers would be curbed.
- Equal competitive practices would be restored.
- Railroads would gain some benefit from their own tax dollars that now go to build and maintain highways.
- The current industrial policy of reducing inventories would be benefited.

Some Disagree—Those in the minority group felt that any such regulatory changes would result in a rate war; that neither railroads nor truckers would benefit financially; that trucks are entitled to "regulatory protection"; that the present "healthy state of competition" would be ended; and that changes might open the door for railroads to secure an eventual monopoly on surface transportation.

A few of the pollees felt it wiser not to comment pro or con. They expressed the feeling that it would be better for transportation companies and regulatory agencies to study the idea at great length before any direct action is taken. There are too many controversial issues involved, they said, which mere opinion cannot solve. This group, however, represented only three-tenths of one per cent of those responding to the poll.

NOW HE'S A MAJOR GENERAL.—Arthur E. Stoddard (left), president of the Union Pacific, has been sworn in as a major general in the U.S. Army Reserve by Col. John R. Dey, chief of the Nebraska Military District. Following his service in the Army Transportation Corps during World War II, Mr. Stoddard was appointed brigadier general in the Officers Reserve Corps. In 1951 he was named director general in command of general headquarters of the Military Railway Service.

Operations

At-Home Situation of Box Cars Best in Twelve Years

Location statements for January 1 indicated that 45.2 per cent of the box car fleet was then located on owning railroads. This reflected the best at-home situation since January 1, 1942, when the percentage was 49.3.

Arthur H. Gass, chairman of the Car Service Division of the Association of American Railroads, reported the foregoing in his latest review of "The National Transportation Situation." He went on to call for continued cooperation of shippers and railroads in the program to bring cars home.

That program, which is based on observance of Car Service Rules, "must continue to permit of periodic repairing and upgrading by the owners," Mr. Gass also said.

Equipment data presented by the C.S.D. chairman showed that a net gain in ownership of 1,197 cars was

realized in January by Class I railroads and their car-line affiliates. New cars installed during the month totaled 4,592, while 3,395 cars were retired.

Mr. Gass' review of equipment conditions by types of cars, indicated a few tight situations, especially with respect to 50-ft. box cars with wide side doors and 40-ft. box cars suitable for loading high-grade commodities. Other tight situations were reported with respect to long gondolas, plain and special flats, and refrigerator cars.

As to freight car detention, the usual checks indicated that 16.26 per cent of cars placed in January were detained beyond the free time of 48 hours. This compared with 17.4 per cent for the previous month, and 16.27 per cent in January 1953.

Trailers-On-Flats for L.C.L. Extended by T&NO

L.c.l. traffic between Houston and Fort Worth-Dallas, Tex., via the Texas & New Orleans lines of the Southern Pacific is now being handled by trailers-on-flat cars. The new service expedites movement of l.c.l. traffic by reducing time and effort formerly needed to handle the freight through terminals and freight stations.

Use of trailers-on-flat cars for handling l.c.l. was inaugurated by the T&NO in May 1953 between Houston and Beaumont, Tex., and Lake Charles, La. (*Railway Age*, May 11, 1953, page 14).

McKay Approves Survey Report on Alaska Railroad

Recommendations designed to enable the government-owned Alaska Railroad to return an annual net profit of "about $2,000,000," based on the present volume of traffic, have been made by a Department of Interior survey team. For the fiscal year ended June 30, 1953, the railroad reported a loss of $300,000, its operating ratio having been 101.5.

The survey team's report has been made public with an Interior Department statement which said the recommendations have been approved by Secretary McKay. The team visited Alaska last November and made an inspection of the railroad on which an $80-million rehabilitation program, begun in 1948, is nearing completion.

Members of the team were: Chairman, Thomas Balmer, vice-president, Great Northern; Harry C. Munson, vice-president, Western Pacific; and H. K. Dougan, former assistant general auditor, GN. Don Miller of the Interior Department served as staff assistant to the team.

The report found the railroad is generally well equipped to provide adequate service for all traffic available. The recommendations called for better use of manpower, revision of the railroad organization, abandonment of unnecessary facilities, and disposal of vast quantities of unneeded war supplies.

The team also recommended that shipping services operated by the railroad on the Tanana and Yukon rivers be disposed of to private operators as soon as possible. It also urged that railroad commissary, hotel and housing operations be further curtailed.

Labor & Wages

Benson's "Non-Op" Letter Is Returned

Emergency board terms secretary of agriculture "not a party" to unions' benefit demand case, and mails back his controversial letter

The flurry of excitement, which a week ago marked "non-op" hearings before a Presidential emergency board, has died down. Judge Charles Loring, chairman of the board, has mailed back to the secretary of agriculture, E. T. Benson, the controversial letter in which the secretary suggested the board (a) avoid any work stoppage on the nation's railroads, and (b) avoid any cause for another increase in agricultural freight rate (*Railway Age*, March 1, page 7).

When Chairman Loring resumed the hearing February 25, he announced: "The board has taken the position that Secretary Benson—or, rather, the Department of Agriculture—not being a party to this proceeding, Secretary Benson's letter cannot be considered by the board and we have returned it to him together with an explanation of our point of view about it."

To this Lester P. Schoene, an attorney for the brotherhoods, offered the unions "commendation" for the "very judicious handling of the situation" by the board. In a somewhat lengthy statement, he also put the letter incident in another light when he said:

"I hope the board can appreciate the handicaps with which we must now proceed in the remainder of this case. I can tell you frankly that we are going to be subjected to a degree of criticism on the part of many people that we represent for even continuing with the proceedings.

"However, we feel that we can have enough confidence in the integrity of the members of this board in their ability to put aside any consideration of the matter. Of course, we all know that if this sort of thing had happened in an injury trial, there would be an immediate mistrial.

"The members of this board are experienced, however, in excluding from their minds extraneous, irrelevant and improper influences. It is only because we have that confidence in the members of the board that we are ready to proceed with the case and to disregard from here on out any effect of the improper communication by the secretary of agriculture."

Later, referring to the brotherhood chiefs' February 24 wire to the President, he said: "I think it should be clear that insofar as our relationships to the political branch of the government are concerned, the matter has not been settled yet."

Carriers Calm — Mr. Schoene's statement became somewhat vitriolic at times. At one point he refused to comment on "the shocking thing that has occurred . . . because, frankly, without resorting to the language of a mule skinner, I don't have the words in my vocabulary that can express strongly enough the condemnation that that [the secretary's] conduct deserves."

By contrast, carrier comment on the secretary's letter, a statement presented by Howard Neitzert, chief counsel for the carriers' conference committees, was a very quiet one. To the board he said:

"You were, of course, appointed to make an investigation. The method and manner in which you make this investigation is entirely up to you.

"We accept your decision with respect to this matter of the letter from the secretary of agriculture. However, I do wish to call your attention to the fact that it is customary for the secretary of agriculture to appear against the carriers in proceedings brought by the carriers before the Interstate Commerce Commission, where we seek rate increases. He opposes those rate increases, in his capacity as secretary of agriculture. It is a little difficult for me to understand what it is that makes these [brotherhood] organizations sacrosanct and immunizes them from the same sort of thing that the carriers face when they are seeking a rate increase."

He later added that he did not want "to leave unchallenged the philosophy which we have on this side of the table as to what is the duty of an emergency board."

That, he said, is to investigate and determine the facts of the situation. "This isn't a formal party proceeding in which the organizations and the carriers are necessarily the only people that have a right to appear here. . . . We over here conceive it to be the duty of the board to get all the help they can from every source in determining the issues in a case of this kind."

Telegrapher Pay — Penalty pay-

ments to telegraphers for work not performed are unjustified and should be eliminated, John J. Sullivan, manager of personnel of the Southern Pacific, testified later the same day. He explained that, as the result of strike threats and rules interpretations of the Railroad Adjustment Board, many roads are forced to give an extra day's pay to a telegrapher whenever a train is stopped at a point where no telegrapher is on duty and a member of the train crew telephones his dispatcher for instructions as to when to proceed. This is true, he pointed out, "even though the telegrapher getting the penalty payment may be located anywhere from 10 to 500 miles away from the place where the train stopped and the train order actually copied." The only alternative, he said, was to employ unnecessary telegraphers at places where they aren't needed.

He challenged the telegrapher union's contention that a penalty must be imposed in order to prevent abuses and alleged violations of the agreement. "There is no abuse," he said, "when the only purpose of a conductor or engineer copying a train order is to expedite the movement of his train. It is in the expeditious movement of traffic that every railroad employee should be vitally interested if we are to keep competitive transportation from taking traffic away from the railroads."

The hearings subsequently recessed until March 8.

Southern Strike Postponed

A threatened strike of some 3,000 Southern Railway engineemen and firemen, called for 6 a.m., March 6, was at least temporarily averted when both parties, on March 3, at the request of the National Mediation Board, agreed to further discussion of the issues involved.

The strike threat, on a train-length-limit dispute, covered about 1,500 members of the Brotherhood of Locomotive Engineers and an equal number from the Brotherhood of Locomotive Firemen & Enginemen.

The B.L.E. also revealed last week that "more than 90 per cent of voting engineers" favored "withdrawal from service" on the Burlington.

In Congress

Senate Passes Mail Trucking Bill

Measure would give Postmaster General more freedom to substitute highway operations for RPO services—Diversion of mail to trucks is growing

The Postmaster General would get full discretion to substitute highway post office operations for railway mail services under provisions of a bill which has been passed by the Senate.

The bill, S.2773, would amend the 1940 mail-trucking act to remove the restriction which prohibits establishment of sorting-en-route trucking operations unless it is found that railroad facilities are inadequate or not available. Its sponsor is Senator Carlson, Republican of Kansas, chairman of the Senate Committee on Post Office and Civil Service.

New Yardstick—The only Senate discussion of the bill was a brief explanation by Senator Carlson. "The new yardstick," he said, "will be that of economy and service . . . and the extended latitude for establishing highway post offices . . . will give the desired flexibility of schedules and service. They will be controlled by the needs of the Post Office Department rather than to conform to passenger needs as in the railroad service."

The Senate's favorable action sent the bill to the House where it was referred to that body's Committee on Post Office and Civil Service.

Meanwhile, diversion of bulk mail from railroads to trucks is continuing. This was pointed up in testimony given by Assistant Postmaster General John C. Allen on proposed appropriations for the department's fiscal 1955 transportation bill.

Truck Network Growing — Mr. Allen's testimony, recently made public, was given before a House appropriations subcommittee last December. He said the department was then having mail trucked on 434 short-haul routes. This would be raised to 564 routes by next June 30 and to 617 by the close of the fiscal year ending June 30, 1955. Mr. Allen added.

"The new routes to be established in fiscal years 1954 and 1955," he also said, "are based on reports of survey teams which show truck service would speed up transportation of mail and at the same time reduce transportation costs."

Railroads Cut Rates — Congress-

WATER TRAIN.—Relief for the drought-stricken area of Olathe, Kan., is now provided daily except Sunday by this 300,000-gal.-capacity water train which brings water from Kansas City. The service will continue until the town's reservoir is brought above its emergency-minimum level. The tank cars were furnished by the U.S. Army Transportation Corps free of demurrage. The St. Louis-San Francisco handles the train at $12.50 a car—a $9.50 reduction from the normal rate for a tank car of water between the two points. "Delivery" at Olathe is made at a Frisco spur to which ditches have been dug to connect with the reservoir.

men questioning Mr. Allen revealed that expansion of trucking operations had resulted in 67 special contracts which were negotiated with railroads for mail transportation services at rates lower than those which were prescribed by the Interstate Commerce Commission.

The department was engaged in negotiating several more like contracts, Mr. Allen said. "A number of railroads," he added, "have come in and indicated they will be willing to make revisions in their rates in order to hold that mail business."

Senate Gets Car-Spotting Bill Favored by N.I.T.L.

The National Industrial Traffic League's car-spotting bill has been introduced in the Senate.

It is designed to deal with plant-switching situations which have arisen as a result of the Interstate Commerce Commission's findings in the terminal-services phase (Part II) of the general Ex Parte 104 investigation of railroad practices affecting revenues and expenses.

League Position—The league has authorized its Special Committee on Ex Parte 104 to secure such legislation in order to "preserve the right of the railroads to approve a complete transportation service under their line-haul rates, and enable the shippers and carriers to work out their common problems with regard to matters of this kind."

The bill's number is S.3021, and its sponsor is Senator Butler, Republican of Maryland, a member of the Senate Committee on Interstate and Foreign Commerce.

The Bill—It proposes to amend the Interstate Commerce Act's section 6(7) by adding a general provision stipulating that nothing in the act's Part I shall prohibit spotting services at industrial plants, without charge in addition to line-haul rates, when the plant tracks permit safe operation by the carrier "without undue interference or interruption by the shipper or receiver."

It is further stipulated, however, that interference or interruption "shall not include the temporary holding of cars . . . for instructions from the shipper or receiver as a necessary incident to the orderly disposition of such cars, the removing and replacing of cars in process of loading or unloading when incident to the performance of such service, the service of securing the weight of freight . . . where the weight is used by the carrier for billing purposes, the operation of classifying, sorting or lining up cars on industry or carrier tracks preparatory to placement or receipt by the carrier . . . or any interference for which a separate charge is authorized pursuant to the publication of a tariff."

New Facilities

PRESIDENT McKENZIE makes it official with the first spade of dirt as . . .

Cotton Belt Breaks Ground

New $1¼-million office building at Tyler will house consolidated system offices for StLSW and StLSW of Texas

Work has begun on the St. Louis Southwestern's new $1,250,000 air-conditioned office building at Tyler, Tex. The building, which will house a majority of system officers and staffs now located at St. Louis or at scattered locations in Tyler, will be 200 ft. by 250 ft., and will require about a year to complete.

Designed by Wyatt C. Hendrick, a Fort Worth architect, the building will feature two interior light areas whereby natural light will be furnished to inside offices. The plan calls for an auditorium seating 500 persons as well as conference rooms, a board meeting room and regular office space. Construction of the foundation and arrangement of offices will permit future expansion. Sufficient land has been acquired around the building site (at West Front street and Hill avenue) to provide ample parking accommodations both for occupants of the building and visitors.

Purpose—The new building is an outward symbol of organizational changes recently approved by the Interstate Commerce Commission's Division 4 (*Railway Age*, January 14, page 28). Under this plan, the St. Louis Southwestern Railway Company, a Missouri corporation, is to lease and operate the St. Louis Southwestern Railway Company of Texas, the Texas subsidiary which has been headquartered at Tyler. Consolidation of many organizational functions at the new Tyler headquarters, and reduction of office space at St. Louis, where the Missouri company has been headquartered, is expected to result in substantial annual savings. Tyler is centrally located with respect to the 1,570-mile Cotton Belt system—a factor that is expected to result in more efficient operations.

When the Tyler building is completed, the transfer of personnel will be carried out by departments over a period of several months. Some 56 system officers and employees—including the president, the purchasing department and the general traffic manager, will remain in St. Louis.

Fireproof—The building will be of two-story construction with a basement that is at ground level on one side. This lower floor will contain offices for the freight overcharge claims department, a business machines room, fireproof vaults and a mail room, in addition to provisions for utilities, C.T.C. equipment and the 500-seat auditorium. Some portions of this floor will be only partially furnished and

used for file storage. The first floor will accommodate the accounting department and all members of the operating departments except the superintendent of transportation and his staff. The second floor will be used for executive, traffic, law, industrial, public relations, freight claim and general claim department offices, as well as that of the superintendent of transportation. All construction will be completely fireproof.

Exterior walls will be of brick backed up with hollow tile. Stone will be used for the coping around the top of the walls and for the belt courses at top and bottom of the windows. The two main entrances will be identically faced with granite and trimmed with extruded fluted aluminum. Tempered glass doors will be used.

Except for a few private offices, the interior finish will consist of plastered walls, accoustical tile ceilings and asphalt tile floors. A pneumatic tube system will handle messages to and from the telegraph office and between the offices of the superintendent of transportation, the auditor and the business machines room. There also will be an extensive inter-office communications system and a remote control dictating system.

O'Rourke Construction Company, of Dallas, is the general contractor.

Agreement Signed for New Maine-Nova Scotia Ferry

With the signing of an agreement between the Canadian National and the state of Maine, the way has been paved for an immediate start on construction of the Bar Harbor terminal for the new international ferry which will link Maine with Nova Scotia. Under the agreement, the Maine Port Authority will complete construction of the terminal by May 1, 1955 (*Railway Age*, November 2, 1953).

The state of Maine has voted $1 million to the Port Authority to cover the cost of the pier and necessary buildings. This capital expenditure will be refunded by the CNR on the basis of annual rentals over a period of 30 years, and at the end of the lease the railway will take over ownership of the terminal. The CNR will operate and maintain the terminal. Provision is made for its use by ships of other lines.

Meanwhile, the Canadian government and the province of Nova Scotia are pushing ahead with plans for the terminal at Yarmouth, N.S. Construction of a $4-million, 600-passenger, 150-automobile ship for the new service is well underway at Davie Shipbuilding Yard, Lauzon, Que. The Canadian government and Nova Scotia will jointly share the cost. Propelled by six twin-screw diesel engines, the vessel will be capable of 18½ knots and make a round trip daily in daylight hours. Its overall length will be 346 ft., and displacement, loaded, about 4,370 tons.

ALL THROUGH FREIGHT TRAINS and 36 wayside offices are radio equipped on 906 miles of GN main line.

More Radio on Great Northern

A radio network is nearing completion along the 906 miles of the Great Northern between Minneapolis, Minn., and Havre, Mont. Engineers operating diesel-electric locomotives of through freight trains on this route already are in constant radio touch with conductors in cabooses; by March 10, men in the locomotives and cabooses also will be swapping train operation information with trackside stations all along the Minneapolis-Havre line.

The last of 36 wayside receiving and sending stations will be installed by then. Some already are in use. Nearly all are in the railway's depots. In Minnesota, they are at Minneapolis (Lyndale yard), Delano, Litchfield, Willmar, Benson, Morris, Campbell and Breckenridge; in North Dakota, at Kindred, Casselton, Nolan, Hannaford, Juanita, New Rockford, Heimdal, Aylmer, Verendrye, Minot, Berthold, Stanley, Tioga, Wheelock and Williston; and in Montana, at Snowden, Bainville, Brockton, Wolf Point, Frazer, Glasgow, Hinsdale, Saco, Malta, Dodson, Harlem, Chinook and Havre.

This is another step in utilization of very high frequency radio by the GN in operating freight trains and in major switching areas. Radio was installed last year on the iron ore route from northern Minnesota mines to the railway's docks at Superior, Wis., and in the mining areas. When the ore season opens this spring more radio facilities will be ready. These will provide communication between the yard office and switching locomotives used on the docks and in nearby yards. Additional switching locomotives in the mining areas will have radio contact with dispatchers. Installations in the Hillyard, Wash., yards, near Spokane, begun in 1953, are being completed.

Wabash Will Modernize Yard at Detroit

A $1.5-million yard modernization project will be started by the Wabash this month at Detroit. C. A. Johnston, general manager, told *Railway Age* the project would be similar to other yard work which the road has undertaken in the past few years.

It is described as a consolidation, enlargement and modernization of terminal facilities—including consolidation of the westbound manifest yard and westbound dead freight yard. It includes construction of a diesel locomotive terminal, including a running repair and inspection building, and fueling and sanding facilities. Enlargement of the eastbound yard to provide receiving tracks of 125-car capacity; installation of a communications system throughout the yard area; and installation of power switches at the entrance to the eastbound yard and the exit of the westbound yard, also are included. A subyard office will be constructed in the westbound yard and a tower will be built at the main yard office. The present yard lighting system will be rearranged and an icing platform will be built. The project will also include construction of additional bridges across Dix avenue.

The work, scheduled to start about March 1, is due for completion before the end of the year.

Bamberger.—A contract has been awarded to Morrison-Knudson Com-

pany to relay one-half mile of paved double track in First West street, in Salt Lake Ctiy. Original 70-lb. rail is being replaced with 115-lb. A.R.A. rail of similar height The company also is replacing rail and some special track work in Ninth South street, serving the Walker Field industrial district. This latter trackage was acquired from the now-abandoned Salt Lake & Utah.

California Western.—Two miles of 70-lb. rail are being replaced with 112-lb. rail at a cost of $40,000; a wooden Howe truss bridge is being replaced with a steel deck-plate girder bridge at an estimated cost of $25,000, and a group of wooden piers are being replaced with concrete piers for another steel deck girder bridge at an estimated cost of $25,000.

Kansas City Southern. — Has ordered from the General Railway Signal Company equipment for installation of a traffic control system on seven miles of single track between Blanchard, La., and Shreveport.

St. Louis Southwestern. — Construction of the Texarkana reservoir by the federal government will require a total of 17½ miles of line change between Naples, Tex., and Redwater. The government will provide right-of-way, perform the grading, and construct necessary masonry and steel structures. The Cotton Belt will construct necessary wooden trestles, as well as track. This latter work has been estimated to cost $5,606,550.

Santa Fe. — A contract covering construction of a 36-ft. by 252-ft. structural steel extension to the diesel traction motor repair shop at San Bernardino, Cal., has been awarded to Lindgren & Swinerton, Inc., Los Angeles. The extension will be equipped with a crane runway. Remodeling of the car repair shed in the shop area at Redondo Junction, Los Angeles, has been covered by a contract awarded to Wm. P. Neil Company, of Los Angeles. The building to be remodeled is 66 ft. by 353 ft.

DEVINS SUCCEEDS SPRAGUE AS M&STL PRESIDENT

Lucian C. Sprague, who has been credited with salvaging the Minneapolis & St. Louis from oblivion and forging it into a profitable Class I carrier, has resigned as president of the road, effective March 1. He will continue to serve the road as chairman of its board, however.

As president, Mr. Sprague has been succeeded by John W. Devins, executive vice-president since 1953 and prior to that, vice-president and general manager.

J. A. Lundgren & Son, Topeka, Kan., have been awarded a contract covering general construction work in connection with alterations for air conditioning of the general office building at Topeka. The installation of piping, air handling units, duct work and the temperature control system will be handled under contract by the Beck-Baer Company, also of Topeka. Grading and culvert work in connection with grade revision projects in the first district of the Oklahoma division has been awarded to Fullerton & Hussey of Oklahoma City, Okla.

Maintenance of Way

Track Equipment Returns 77% on Investment

The Pennsylvania's total investment of $31 million in mechanized maintenance-of-way equipment is saving that company approximately $24 million—about 77 per cent—per year, P. M. Roeper, superintendent of the PRR's New York division, told the New York Railroad Club at its February 25 meeting.

"Mechanization of maintenance-of-way work," Mr. Roeper said, "has been in the background too long. Too many people have forgotten that it is permitting railroads to perform many items of maintenance work at less unit cost today than in 1928, despite the almost fourfold increase in labor rates." He emphasized, however, that maximum benefit from mechanized maintenance equipment requires:

(1) Expert use of such equipment by track supervisors;

(2) Careful programming of work by engineering officers; and

(3) Close coordination of maintenance activities with train operation.

Mr. Roeper's talk was one of four delivered by members of the Metropolitan Superintendents' Association; other speakers were R. J. Duggan, superintendent terminals, New York, New Haven & Hartford, on harbor operations; J. D. Carkhuff, division superintendent, New York Central, on safety; and J. A. Craddock, division superintendent, Lackawanna, on customer and public relations. P. W. Early, superintendent of the Lehigh & Hudson River, and chairman of the M.S.A., presided.

What Better Avenue? — A railroad, Mr. Craddock said, is like other industries in that "it consists of two parts—its physical plant and its personnel. But it is unlike other industries in that a large proportion of its employees, and not merely its trained sales force, comes into contact with the public.

"Public opinion about railroads is not going to be any better than the opinion of those who work for them. Therefore, what better avenue have we toward good public opinion than through our employees and their families? In all too many cases employee attitudes are wrong, but supervision can improve those attitudes by continuously cultivating employees, by treating them as human beings, by realizing they have their 'ups and downs,' and by making them realize they are an integral part of the railroad."

Customer and public relations, the DL&W officer said, "is simply the art of getting along well with the people we are privileged to serve. The commuter and the l.c.l. shipper is just as important as the long-haul passenger and the carload shipper."

Law & Regulation

I.C.C. Told Some Roads Violate Free Travel Ban

The practice of providing free railroad transportation for representatives of newspapers or magazines to secure publicity for a new train, or for other purposes, has been condemned by an I.C.C. examiner.

The examiner, Edward L. Boisseree, has recommended that the commission forbid this practice because it violates the I.C. Act. Mr. Boisseree also considers it a violation for a railroad to provide free transportation as a prize for contest winners.

Views of the examiner were set forth in a proposed report submitted to the commission last week. The report was another step in a proceeding which the I.C.C. initiated in 1950 to determine railroad practices in giving free transportation.

Examiner Boisseree said evidence in the case "supports the conclusion that the vast majority of railroad companies have operated in good faith." He said there is no evidence that roads have made "deliberate efforts" to pursue practices knowingly prohibited by statute.

Approved Practices—Free transportation may, in some instances, be provided without violating the act, the examiner said. He said it is apparent that roads may provide free travel for furloughed employees while they are working for employee labor organizations.

Representatives of special service companies—the Union News Company, for example—may be provided with free transportation as long as it is limited to that required to carry out the company's contract with the railroad. Likewise, free transportation may be given in connection with a railroad's insurance programs, according to Examiner Boisseree.

In condemning free transportation

for contest winners, the examiner said it is the "usual practice" for western roads to make awards to local or district winners of 4-H Club or Future Farmers of America contests. He said there is no uniformity in the way roads make their awards, but it is "clear" that such awards do violate the I.C. Act.

If a carrier makes an unrestricted lump-sum contribution to these youth organizations there is no basis for concluding it violates the act, even though some of the money ultimately is used in the payment of transportation charges, the examiner said.

I.C.C. Asked to Enter Train Abandonment Case

The I.C.C. has been asked to take jurisdiction in a case involving the abandonment of a commuter train, and the case poses a question of commission authority in this field of regulation.

A request was filed by the New Jersey & New York, operated by the Erie, asking the I.C.C. to override the New Jersey Public Utility Commission. The plea was filed under section 13 (3) of the I.C. Act.

Pending in Congress is a bill, S. 281, which would amend the existing section 13 (3) and (4) so as to give the commission authority over passenger-service abandonments when such service is found to be "unreasonably discriminatory" or a burden on interstate commerce.

The NJ&NY train, identified as No. 613, operates from New York City to Spring Valley, N.Y., via Jersey City, N.J. The road claims that passenger revenues total $16,000 a year while out-of-pocket expenses total $50,000.

Refusal of the state commission to permit abandonment of No. 613 has been upheld by the New Jersey Supreme Court. The road contends that continued operation results in "unreasonable losses" to the carrier and therefore creates an undue burden on interstate commerce.

Carriers Challenge I.C.C. On 'Piggyback' Rules

Western railroads have joined the National Industrial Traffic League in charging that the I.C.C. lacks authority to prescribe general rules governing the movement of trailers on flat cars.

The carriers asserted, in a statement filed last week, that the I.C.C. cannot formulate "piggyback" rules under section 4 of the Administrative Procedure Act. There is no underlying "general rule making power" in Part I of the I.C. Act, the carriers said.

This was the position outlined in a N.I.T. League statement filed with the commission in mid-February (*Railway Age*, February 15, page 10). The league attacked a January 6 notice in which the I.C.C. assigned to its Division 3 the job of formulating rules which will enable "piggybacking" to develop with a minimum of legal controversy and uncertainty.

Meanwhile, other statements have arrived at the commission. Armour & Co., the meat packing firm, suggested that rules be written which will permit private carriers, as well as motor common carriers, to use trailers on flat cars. The firm said it would be interested in using T-O-F-C service for the distribution of meat, dairy and poultry products.

Lifshultz Fast Freight, a Chicago freight forwarder, told the commission it would be in the public interest for rail carriers to establish joint rates with forwarders to cover the handling of loaded trailers on flat cars.

COMPETITIVE PIGGYBACK STARTED BY C&NW

Trailerload rates for overnight door-to-door trailer-on-flat-car service between Chicago and Green Bay, Wis., were inaugurated by the Chicago & North Western on March 1. The service is directly competitive with motor common carrier service. It is separate and distinct from the less-carload service at regular rates which the road established last August 14 between those cities and later between certain other points on its system. A report that the C&NW had proposed the new trailer-load service appeared in the January 18 *Railway Age*.

Paul E. Feucht, president of the C&NW, explains that the new service will enable shippers of certain commodities in trailer-load quantities "to obtain from the railway the same type of flexible service at the same rates provided by highway common carriers." As in the l.c.l. piggyback service, the C&NW is using its own trailers.

"The new tariff opens North Western rail service to industries which do not have their own rail sidings," Mr. Feucht continued. "It also enables us to provide a flexible service comparable to that provided by over-the-road trucks in an area that has been particularly susceptible to truck competition."

Bill Proposes to End Rate Discounts for Governments

A bill has been introduced in the House to remove the federal, state and local governments from the list of those eligible to receive free or reduced-rate transportation under section 22 of the Interstate Commerce Act.

It is H.R. 8029, sponsored by Representative Hinshaw, Republican of California, a member of the House Committee on Interstate and Foreign Commerce. When he introduced it he said the National Industrial Traffic League and "practically all of the transportation industry" favors such legislation, although he understands the railroads "are divided in their opinion as to the need for this amendment."

"The United States government,"

(*Continued on page 78*)

FIRST OF THE NORFOLK & WESTERN'S Class J locomotives recently passed its two-millionth mile post. No. 600 (above), reached that mark when it brought the eastbound "Pocahontas" through the Narrows of New River in western Virginia, 334 miles from Norfolk, at 9:40 a.m. February 19. Two days later another Class J locomotive, No. 601, also passed the two-million-mile total. No. 600 rolled from the N&W's Roanoke shops, where it was designed and built, in October 1941.

Locomotive Condition Report

. . . FILED FOR 1953 BY I. C. C. BUREAU

The condition of steam locomotives as found by the inspectors of the Interstate Commerce Commission's Bureau of Locomotive Inspection for the year ended June 30, 1953, is not improving as indicated by the percentage of those inspected and found defective. The report as submitted by Charles H. Grossman, the bureau's director, shows in detail the result of inspections of both steam and "other than steam" locomotives.

In the case of steam locomotives, a comparison of the years 1948 and 1953 serves to show what has taken place. In the former year there were 37,073 locomotives for which reports were filed. On those locomotives a total of 93,917 inspections were made and of those inspected 10 per cent were found defective. By 1953 the number of steam locomotives for which reports were filed had dropped to 15,798 and, for these, 28,899 inspections were made and 12 per cent of those inspected were found defective. The table of reports and inspections indicates, however, that the defects, though increasing in number, are somewhat less serious in nature, for, of the locomotives found defective in 1953, a slightly smaller percentage were ordered out of service than in the earlier year.

In the case of "locomotives other than steam" the situation is different. In the years compared, 1948 versus 1953, the number of locomotive units for which reports were filed has increased greatly. So has the number of inspections made. The percentage of those inspected and found defective has more than doubled—from 4.1 per cent in 1948 to 8.7 in 1953. However, improvement is shown in the fact that the ratio of the number of defects found to the number of inspections made has decreased in the six-year period.

In the case of steam locomotives accidents occurred in 1953 resulting in 12 deaths and 62 injuries. While this represents a decrease of 63 in the number of accidents, as compared to 1952, it represents an increase of nine in the number of persons killed and a decrease of 64 in the number of persons injured.

NUMBER OF CASUALTIES CLASSIFIED ACCORDING TO OCCUPATION

Steam Locomotive Accidents

	Year ended June 30—									
	1953		1952		1951		1950		1949	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
Members of train crews:										
Engineers	4	23	1	36	2	51	2	64	3	75
Firemen	4	21	2	45	3	62	2	64	3	92
Brakemen	3	8	..	19	1	20	2	29	1	30
Conductors	.	3	..	3	..	6	..	4	..	7
Switchmen	..	2	..	2	1	8	..	5	..	6
Roundhouse and shop employees:										
Boilermakers	..	..	..	2	..	2	..	2	..	2
Machinists	..	1	..	2	1	2	..	1	..	4
Foremen	..	1	..	2	..	2	..	1	..	..
Inspectors	..	..	..	..	..	2	..	2	..	..
Watchmen	..	..	..	2	1	..	1	4	1	..
Boiler washers	..	..	..	..	..	..	..	..	..	..
Hostlers	..	..	..	8	1	4	..	1	1	8
Other roundhouse and shop employees	..	2	..	2	..	2	..	2	1	4
Other employees	..	..	..	1	..	3	..	4	..	6
Nonemployees	1	1	..	2	4	6	..	1	..	9
Total	12	62	3	126	14	170	7	184	10	243

Units Other Than Steam

	Year ended June 30—									
	1953		1952		1951		1950		1949	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
Members of train crews:										
Engineers	..	14	..	15	..	11	..	15	..	12
Firemen	..	36	..	31	1	30	..	21	..	14
Brakemen	..	12	1	12	..	4	..	3	..	6
Conductors	..	5	..	4	..	..	..	4	..	..
Switchmen	..	2	..	8	..	5	..	1	..	4
Maintenance employees	..	4	..	6	1	3	..	3	..	8
Other employees	..	2	..	1	..	13	1	2	..	13
Nonemployees	..	13	..	..	..	63	2	1	..	10
Total	..	88	1	77	2	129	3	50	..	67

SUMMARY OF REPORTS AND INSPECTIONS

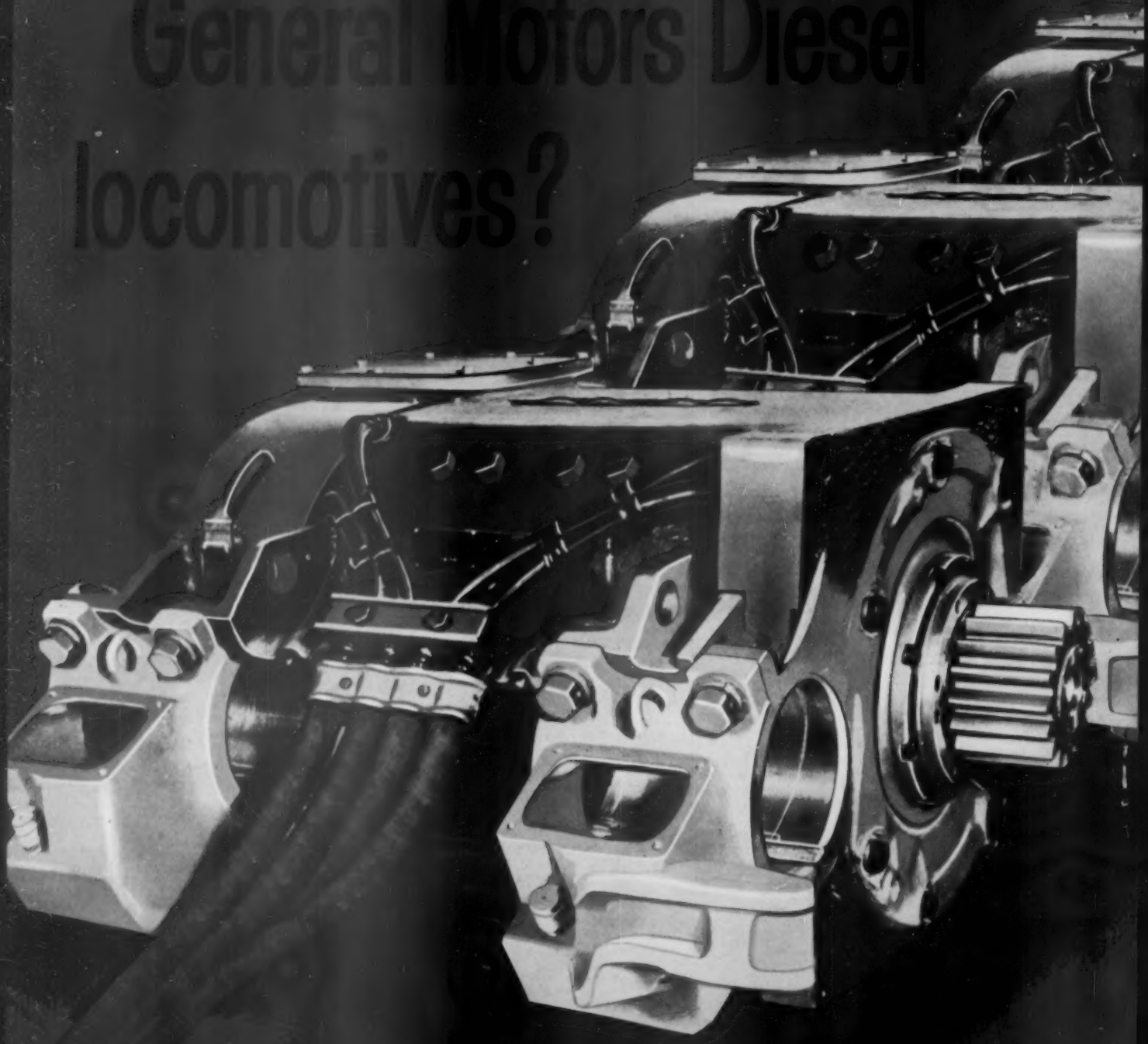
Steam Locomotives

	Year ended June 30—					
	1953	1952	1951	1950	1949	1948
Number of locomotives for which reports were filed	15,798	20,490	26,595	29,743	33,866	37,073
Number inspected	28,899	45,220	62,113	66,809	85,353	93,917
Number found defective	3,583	6,234	7,995	6,740	7,035	9,417
Percentage of inspected found defective	12.4	13.8	12.9	10.1	8.2	10.0
Number ordered out of service	163	370	508	399	436	654
Number of defects found	12,980	24,738	34,657	28,504	28,642	38,855

Locomotives Other Than Steam

	Year ended June 30—					
	1953	1952	1951	1950	1949	1948
Number of locomotive units for which reports were filed	25,374	22,716	19,320	15,719	12,692	9,803
Number inspected	75,170	65,263	52,948	42,503	30,684	20,798
Number found defective	6,571	6,087	4,375	2,748	1,238	853
Percentage of inspected found defect've	8.7	9.3	8.3	6.5	4.0	4.1
Number ordered out of service	118	135	106	42	20	21
Number of defects found	17,163	16,613	11,935	6,325	2,804	1,745

do you know that you more tractive effort in the new General Motors Diesel locomotives?



get up to 15%

...and that short-time ratings have been eliminated in normal applications of the new D-37 Traction Motor

Other Plus Features of General Motors Locomotives

Unmatched Experience gained in designing, engineering and building more than 15,000 Diesel locomotive units.

Superior Manufacturing Facilities for mass production of highest-quality locomotives at lowest cost. Also lower-cost replacement parts.

Prompt Parts Supply through strategically located factory branches and parts warehouses at nine key railroad centers.

Skilled maintenance advisory service by a nationwide staff of service engineers and parts specialists.

Factory Rebuilding of major assemblies with same techniques and tooling used in new manufacture.

Unit Exchange Service—Prompt delivery of fully rebuilt and warranted assemblies in exchange for units needing rebuilding. Less inventory, lower cost.

Special Engineering of new and improved parts to make them fit General Motors units of any age. Old units can be brought up to latest standards.

One-Year 100,000-Mile Warranty on Electro-Motive parts and rebuilds effective upon installation, not the date of shipment.

ONE MANUFACTURER—ONE RESPONSIBILITY for all phases of locomotive performance.

The best locomotives are even better today!

ELECTRO-MOTIVE DIVISION
GENERAL MOTORS

La Grange, Illinois • Home of the Diesel Locomotive • In Canada: GENERAL MOTORS DIESEL, LTD., London, Ontario

GENERAL MOTORS LOCOMOTIVES

MODERN ANNEALING FACILITIES-

For Cold Finished Alloy Bars

These modern furnaces insure uniform annealed quality, which is another important reason why Youngstown Cold Finished Alloy Bars are so satisfactory.

Their machinability and cold working properties are superior. Tolerances, metallurgical characteristics and all phases of the manufacture of Youngstown Cold Finished Alloy Bars are subjected to rigid quality control of a single integrated organization—from mining of the ore to shipment of the finished product.

Youngstown Cold Finished Alloy and Carbon Steel Bars are furnished in standard shapes and sizes, in both coils and straight lengths. For further information, phone or write our nearest District Sales Office.

Youngstown COLD FINISHED CARBON AND ALLOY STEEL BARS

THE YOUNGSTOWN SHEET AND TUBE COMPANY *Manufacturers of Carbon, Alloy and Yoloy Steel*

General Offices: Youngstown, Ohio - Export Office: 500 Fifth Avenue, New York 36, N. Y.

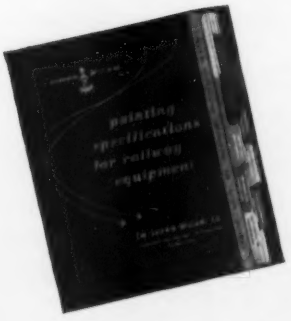
PIPE AND TUBULAR PRODUCTS - CONDUIT - BARS - RODS - COLD FINISHED CARBON AND ALLOY BARS - SHEETS - PLATES - WIRE - ELECTROLYTIC TIN PLATE - COKE TIN PLATE - RAILROAD TRACK SPIKES

LESS NEED TO BE...
if the paint's S-W!

Structural steel seven stories up is a costly painting project to undertake very often. That's why the Reading Railroad specified a Sherwin-Williams two-coat system for repainting the train shed of its Philadelphia passenger terminal.

They started with Sherwin-Williams heavy-duty KROMIK® Primer . . . the primer that includes red lead and three other protective pigments, too. They finished with Sherwin-Williams SILVERBRITE® Aluminum . . . a ready-mixed paint of exceptional brilliance, uniformity, durability and ease of application.

Whatever your painting problems . . . inside or out . . . you'll find S-W Maintenance-of-Way Finishes specially engineered for the job. Consult your Sherwin-Williams Representative, or write The Sherwin-Williams Co., Transportation Division, Cleveland 1, Ohio.

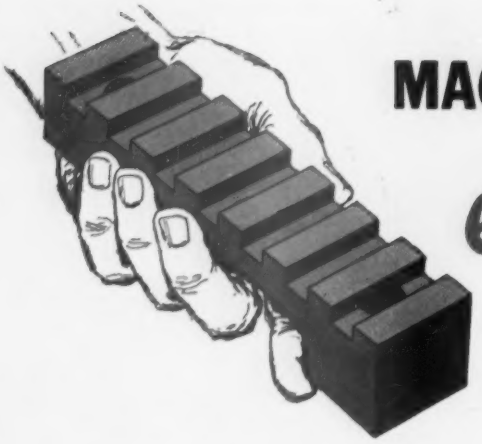


Your guide to better engineered finishes for rolling stock

Latest recommended systems for finishing all types of equipment from Diesel locomotives to cabooses are covered in a new series of Sherwin-Williams brochures. Ask for copies relating to your equipment.

SHERWIN-WILLIAMS

RAILWAY FINISHES



MAGNUS R-S JOURNAL STOP

eliminates biggest

This new development prevents excessive axle displacement under braking and impact forces—eliminates waste grabs, adds life to bearings, keeps packing in place, and cuts down man hours for car servicing.

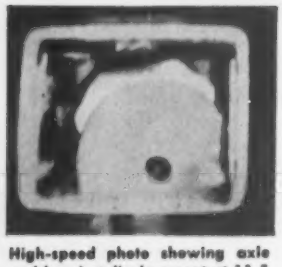
From a purely mechanical standpoint – what's the biggest single cause of hot boxes? The answer is truck design – loose, nominal-dimension construction that permits virtually unrestricted axle movement fore and aft within the journal box. The result: whenever there's a heavy brake application, or a heavy impact during road or switching operations, the axle rolls right out from under the bearing – cocks both bearing and wedge out of position. The packing is displaced, too – often gets trapped under the bearing crown. And linings are spread because of the concentrated uneven loading.

The new Magnus R-S Journal Stops for standard integral cast boxes prevent all that – virtually eliminate waste grabs and spread linings due to concentrated loading. Made of bronze bearing metal, they keep the bearing and wedge in place *under all conditions,* let the bearing take the load in the crown where it should. If you put the bearings in right, they stay right. Journal Stops keep the packing in place, too. Can cut down time-consuming adjustment at servicing points – may speed up departure times.

R-S Journal Stops have been in test service for more than a year and a half. During that time there has been only slight wear on the Journal Stops and *there have been no hot boxes!* All bearings removed for inspection after 18 months were returned to service. In addition, it was found that there was substantially less than normal wheel flange wear, and the wear uniform on all wheels. This could mean very important savings in terms of extended wheel life alone.

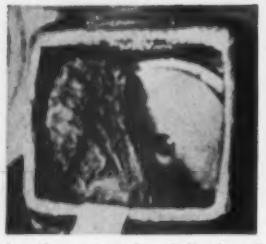
Be sure to get your free copy of our Bulletin 1002 describing the new Magnus R-S Journal Stop and Packing Retainer. Just write a post card or letter to Magnus Metal Corporation, 111 Broadway, New York 6; or 80 East Jackson Blvd., Chicago 4.

This CAN'T HAPPEN when you use the R-S Journal Stop

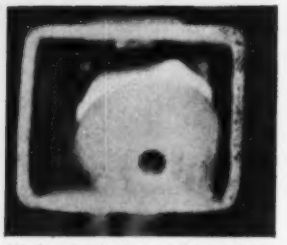


High-speed photo showing axle and bearing displacement at 11.5 mph impact.

Still shot shows packing condition after 450 mile run with no switching or humping involved.



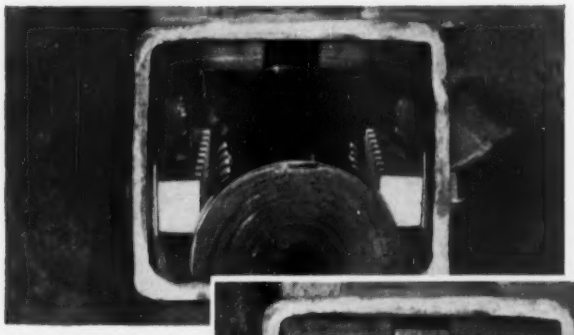
Another example of displaced packing after 450 mile run.

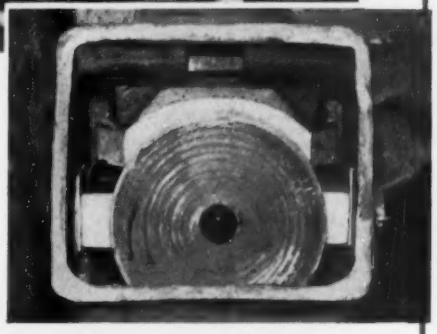


High-speed photo of incipient waste grab at impact of 7.7 mph.

and PACKING RETAINER

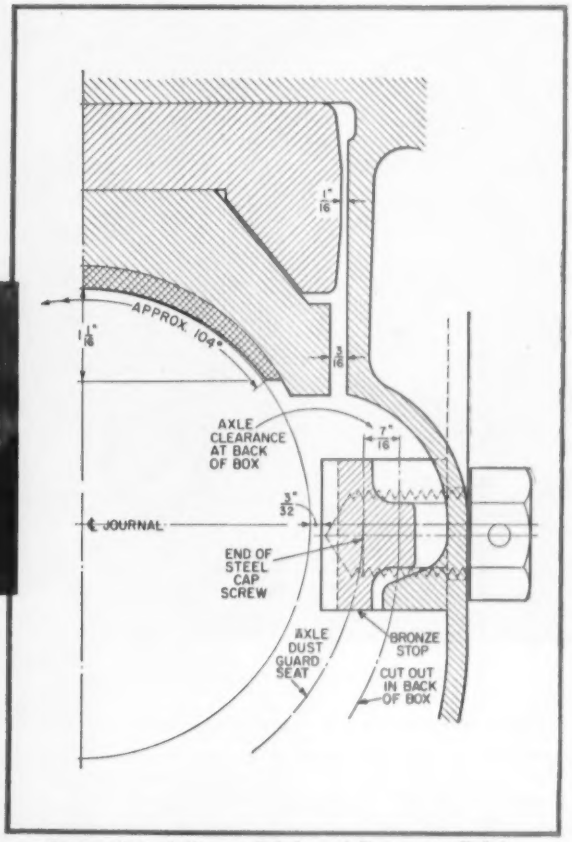
single cause of hot boxes!





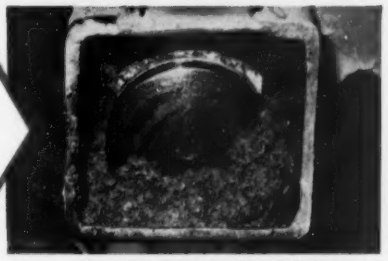
Above: Jacked journal box with packing, bearing and wedge removed, showing mounting of Journal Stops on inside walls of box.

Right: Journal box with wedge and bearing in place (no packing), showing Journal Stops and car journal in operating position.



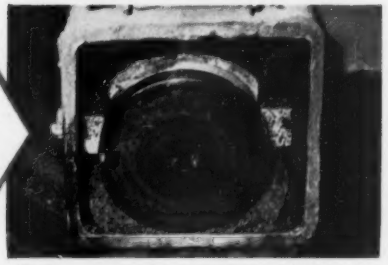
Cross-section of Magnus R-S Journal Stop as applied to 5½-in. x 10-in. journals. Regardless of journal size, the bronze journal stop is 2½-in. shorter than journal length. Bearing and wedge can be taken out for inspection without removing Journal Stops. Only one Journal Stop need be removed from each box to remove side frames.

NO STOPS



Here's what happened to the packing in a journal box after flat-switching impact at 11½ mph. Packing badly displaced.

WITH STOPS



Here's a box on the same car fitted with Journal Stops after undergoing same 11½ mph impact test. Packing is still in its proper position.

MAGNUS

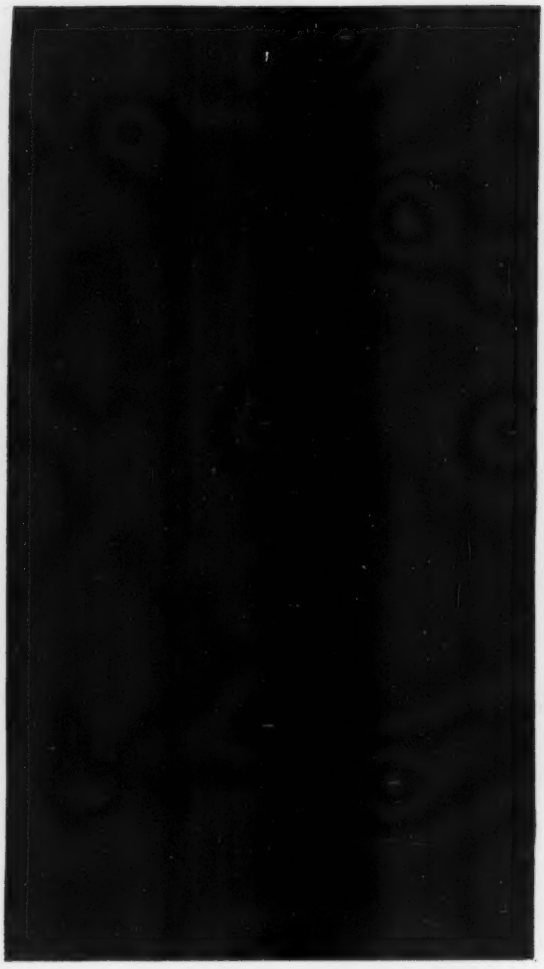
Solid Bearings

Right for Railroads

...in performance...in cost

MAGNUS METAL CORPORATION *Subsidiary of* **NATIONAL LEAD COMPANY**


Does your car
heating put
you in the
gas light era?



Honeywell has the only modern car heating system

IT'S electronic! It outmodes *all* other systems. Honeywell Electronic Car Heating makes even your 3-year-old systems obsolete and wasteful!

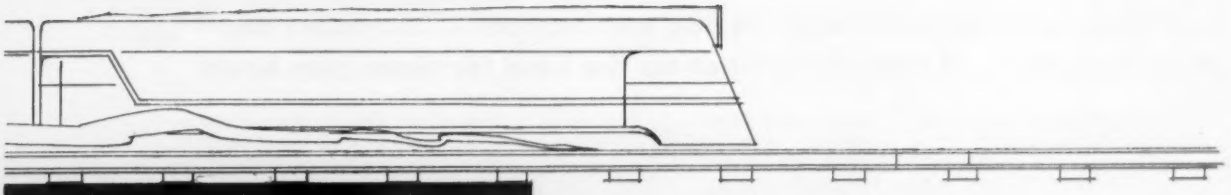
Minneapolis-Honeywell started a revolution in car heating when it entered the railroad field just a few short years ago.

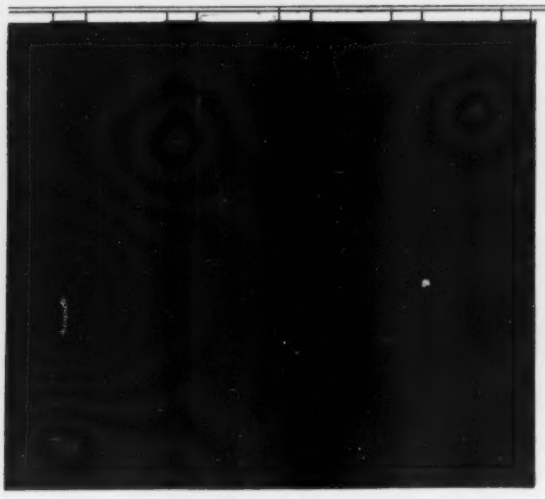
To improve the equipment then on the market, Honeywell developed a simple electronic control system to create *even* heat *throughout the car.* It did away with costly wasted steam . . . "heat pile-up" so irritating to passengers . . . and the inefficiency of equipment duplication that is so unnecessary—*and so expensive.*

Honeywell is a modern system—and will *stay modern* for a long time to come. You won't replace it in a few years because of obsolescence. Neither will you have to discard expensive equipment that wasn't necessary in the first place!

You replace other obsolete equipment, so why stick with outmoded, inefficient car heating? The savings from Honeywell lower operating and maintenance costs *are substantial.*

All the nation's railroads reap the gain from Honeywell's entrance into car heating competition. So review *your* car heating systems—Honeywell can be installed easily, economically as standard shopping procedure.





MINNEAPOLIS
Honeywell

H HONEYWELL *Transportation Division*

104 OFFICES ACROSS THE NATION

Pittsburgh's Hot-Spray CARHIDE

The Two-in-one Freight Car Paint!

Provides twice as much paint in one application . . . Increases paint shop capacity . . . Keeps equipment on the haul for more pay hours

YOU'LL get more pay hours from your freight rolling stock when you paint them with Pittsburgh's Hot-Spray CARHIDE. This latest development in famous CARHIDE railway finishes provides the equivalent of *two coats of paint applied cold with a single application* . . . puts cars into service more quickly . . . keeps them looking better longer.

● **In Hot-Spray CARHIDE,** heat is used in place of conventional thinners to adjust viscosity to weather and temperature conditions. No matter when you paint, this new type of coating goes on more uniformly, has better adhesion, dries quickly to a higher gloss, and gives you tougher, longer-lasting protection.

● **Hot-Spray CARHIDE** can be applied with approximately half the usual air pressure. This reduces the amount of "fog" in the paint shop—more of the solid material reaches the surface being painted. There is less paint sag—more paint is applied with less labor. As there is much less thinner to evaporate from the paint, imperfections from shrinkage are greatly decreased.

● **Refinishing is speeded** as half the time needed to apply two coats, as well as drying time between coats, is eliminated. Shop capacity is practically doubled without increasing space, manpower or equipment.

● **We'll be glad** to give you further details about this new labor-saving freight car paint. A wire, phone call or letter from you may save time and money in your shop, traffic and operating departments.

PITTSBURGH PLATE GLASS CO., Industrial Paint Div., Pittsburgh, Pa. Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Adanta, Ga.; Houston, Texas; Los Angeles, Calif.; Portland, Ore. Ditzler Color Div., Detroit, Michigan. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio. M. B. Suydam Div., Pittsburgh, Pa.

PITTSBURGH PAINTS

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

MODERN HIGH-SPEED, EASY RIDING

CABOOSE CAR TRUCKS

BARBER-BETTENDORF

Swing Motion

CABOOSE CAR TRUCKS

●

ANOTHER OF THE
FINE TRUCKS CAST BY

SCULLIN

STEEL CASTINGS MANUFACTURER

NEW YORK
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SCULLIN STEEL CO.

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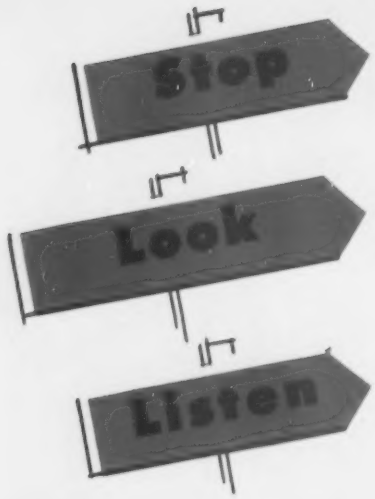

excessive track maintenance costs

at the records set by PULLMAN-STANDARD equipment

to the FACTS these men can give you

T. Y. GEHR, Manager
Pullman-Standard Track
Equipment Department

R. C. CALDWELL
Southwestern District
Sales Manager

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Commercial Engineering
and Field Service Section

J. M. DUBOIS
Manager Track Equipment
Spare Parts Sales

W. H. KNIPPLE
Manager Track Equipment
Engineering Section

H. J. PEAKER
Eastern District
Field Service Engineer

H. J. DUMICH
Western District
Field Service Engineer

Get all of the facts about the Pullman-Standard Track Maintenance equipment that has successfully set new records for speed and economy.

Study the engineering and construction details of this equipment and see why track maintenance costs can be reduced so much.

Look at the performance of the Pullman-Standard Power Ballaster, Power Cribber or Power Cleaner. Compare it with any other available equipment and see why, mile after mile and year after year, these Pullman-Standard built units can assure better, faster, lower cost track maintenance.

A Pullman-Standard representative will be glad to give you *all* the facts.

YOUR NEEDS CREATE THE PULLMAN "STANDARD"

PULLMAN-STANDARD

CAR MANUFACTURING COMPANY

SUBSIDIARY OF PULLMAN INCORPORATED

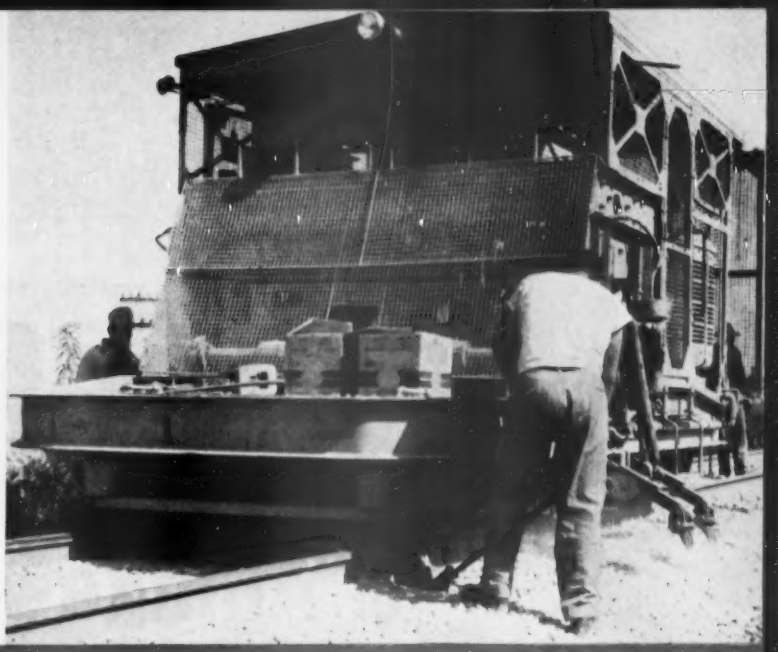
79 EAST ADAMS STREET, CHICAGO 3, ILLINOIS

BIRMINGHAM, PITTSBURGH, NEW YORK, SAN FRANCISCO, WASHINGTON

PULLMAN-STANDARD

Power Ballaster

With a production rate of 500 to 700 feet an hour, a Pullman-Standard Power Ballaster, run by a single operator, can be efficiently manned by a crew of 10 to 15 men. Case history studies made on 14 railroads prove that this unit will give more feet of finished tamped track per hour, with less labor and maintenance, than any other production tamper.



PULLMAN-STANDARD

Power Cleaner

and Winch Car Team

For the first time both track shoulders can be cleaned simultaneously at 1000 to 1200 feet per hour with only four men. Even in multiple track territory, the shoulder plus half the six-foot are cleaned to a depth of eight to ten inches below the tie base at the same high rate and with the same low labor complement. Your ballast cleaning costs can be reduced by as much as 50%.

PULLMAN-STANDARD

Power Cribber

The Pullman-Standard Power Track Cribber gives you two cribs a minute, with a single operator. With a normal production rate of 100 to 225 track-feet per hour, its interchangeable 4-, 5-, and 6-inch digger tips enable it to crib efficiently and economically in any type of ballast, regardless of cementation.

No time off

for Adlake Switch Lamps

There's no "time off" for ADLAKE Switch Lamps . . . they're on the job, with complete dependability, 24 hours a day! They are designed to give trouble-free service through every weather condition, at minimum cost.

Whether fitted with standard or reflex lenses, whether made of cast or sheet metal, ADLAKE Switch Lamps can be counted on to meet every need of railroad operation. The electric lamps can be furnished for battery or line current, as desired.

Let us show you how ADLAKE Lamps can save you money and give you added efficiency! Address The Adams & Westlake Company, 1150 N. Michigan, Elkhart, Indiana. No obligation, of course.

THE Adams & Westlake COMPANY

Established 1857 • ELKHART, INDIANA • New York • Chicago

Manufacturers of ADLAKE Specialties and Equipment for the Railway Industry

Adlake 97th year of serving the transportation and building industries

Santa Fe Railway System

Operates a Fleet of

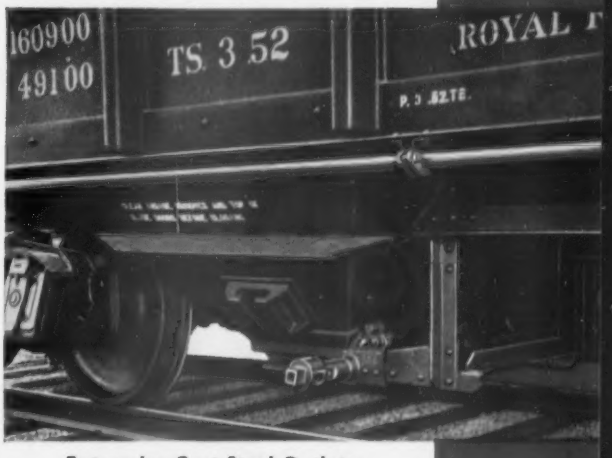
1700 Covered Hopper Cars

Equipped with

ENTERPRISE OUTLETS

70-Ton Covered Hopper Car Equipped with Enterprise Cast Steel Outlets.

These covered hopper cars are handling vast quantities of cement, concentrates, ore, silica sand, fertilizers, and many other commodities required for the great industrial and public works projects in the fast growing Santa Fe territory.



Enterprise Cast Steel Outlets for Covered Hopper Cars.

Door Operating Devices Exclusively Since 1905

ENTERPRISE RAILWAY EQUIPMENT COMPANY

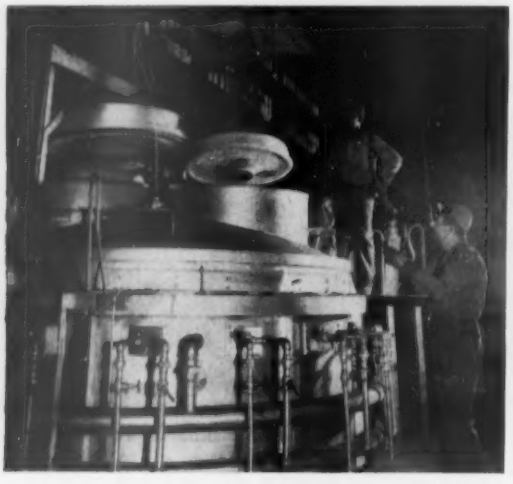
59 East Van Buren Street • Chicago 5, Illinois

because of a new high in uniformity

YOU GET A COMPLETE WITH ONLY

Graphite molds, machined to extremely close tolerances, are used in producing the Griffin EQS. Note clean appearance. Special silica spray also helps give wheel its fine finish.

Pressure-pouring and electric quality steel—two significant factors that assure complete filling of the mold with steel of closely controlled analysis.

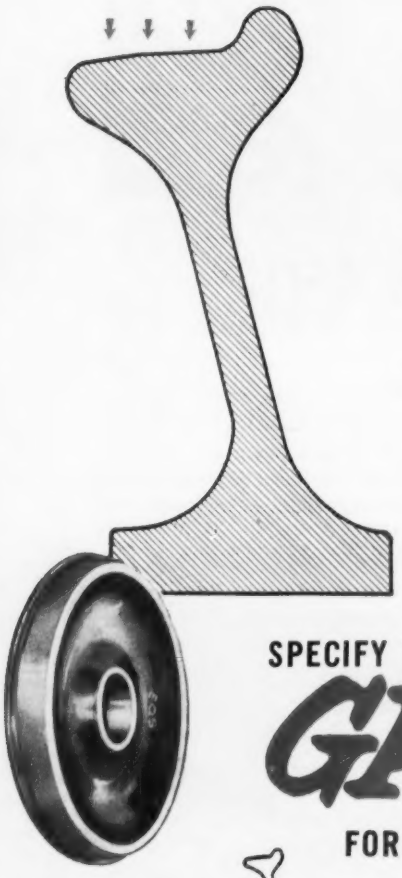


Normalizing in a temperature-controlled furnace, regulated to prevent decarburization. After removal, wheel is differentially control-cooled to room temperature.

Each Griffin EQS Steel Wheel is shot-blasted and given a 100% Magna-glo inspection. Taping for size completes its manufacture, and molds are immediately prepared for re-use.

CAR WHEEL INVENTORY
2 TAPE SIZES

when you specify the Griffin EQS



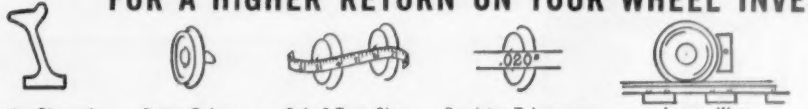
- All other dimensions accurate to .020" tolerance.
- Virtually perfect balance—as-cast.
- Excellent rotundity.
- Precision molds—plus shotblasting—result in clean, smooth appearance.
- 100% Magna-glo inspected.

SPECIFY THE

GRIFFIN EQS

E LECTRIC Q UALITY S TEEL

FOR A HIGHER RETURN ON YOUR WHEEL INVESTMENT



Greater Strength · Better Balance · Only 2 Tape Sizes · Precision Tolerances · Longer Wear

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Eleven modern plants—strategically located for service:

Tacoma • Los Angeles • Salt Lake City • Denver • St. Paul • Kansas City • Council Bluffs
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THE ENGINEER'S REPORT

DATA

LUBRICANT RPM Delo Oil R.R.

UNIT Diesel locomotive

SERVICE Transcontinental freight—grades to 1.8%

PERIOD 3 years

LOCATION Minneapolis, Minn., to Wenatchee, Wash.

FIRM Great Northern Railway

504,851 freight miles in 3 years without overhaul!

ONLY 0.002 INCH WEAR was miked on liners of this locomotive's engines when they were inspected after 504,851 actual miles. Lubricated with RPM DELO Oil R.R., the engines operated without trouble of any kind during 3 years of tough service hauling freight over the Continental Divide. Representative piston and liner, above right, shown as they appeared when taken from one of the engines, demonstrate good condition of parts after this extended service. All rings were free when engine was torn down. Overhaul was performed only because of time and mileage on engine, which was estimated to have idled the equivalent of 100,000 miles in addition to actual mileage. Besides low wear of liners, other wear measurements (inches) were only: Wrist Pin—0.001; Wrist Pin Bushing—0.0015; Carrier Bushings—0.0015; Oil Ring—0.003.

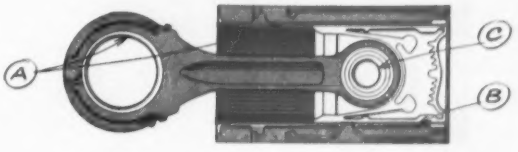
REMARKS: Great Northern Railway's diesels haul heavy freight up grades as severe as 1.8%. Engines operate in dust and heat in summer, snow and extreme cold in winter.

FREE CATALOG: "How to Save Money on Equipment Operation," a booklet full of valuable information, will be sent you on request to Standard Oil Company of California, 225 Bush St., San Francisco, Calif.

RPM DELO LUBRICATING OILS

TRADEMARK "RPM DELO" REG. U.S. PAT. OFF.

How RPM DELO Oil R.R. prevents wear, corrosion, oxidation



A. Special additive provides metal-adhesion qualities...keeps oil on parts whether hot or cold, running or idle.

B. Anti-oxidant resists deterioration of oil and formation of lacquer...prevents ring-sticking. Detergent keeps parts clean...helps prevent scuffing of cylinder walls.

C. Special compounds stop corrosion of any bushing or bearing metals and foaming in crankcase.

FOR MORE INFORMATION about this or other petroleum products of any kind, or the name of your nearest distributor handling them, write or call any of the companies listed below.

STANDARD OIL COMPANY OF CALIFORNIA, San Francisco 20 • STANDARD OIL COMPANY OF TEXAS, El Paso
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The Best Back-Bone for Trailer Transports

THE NEW HAVEN **A VETERAN TRAILER TRANSPORT RAILROAD CHOOSES AN** ***INTERNATIONAL*** **UNDERFRAME.**

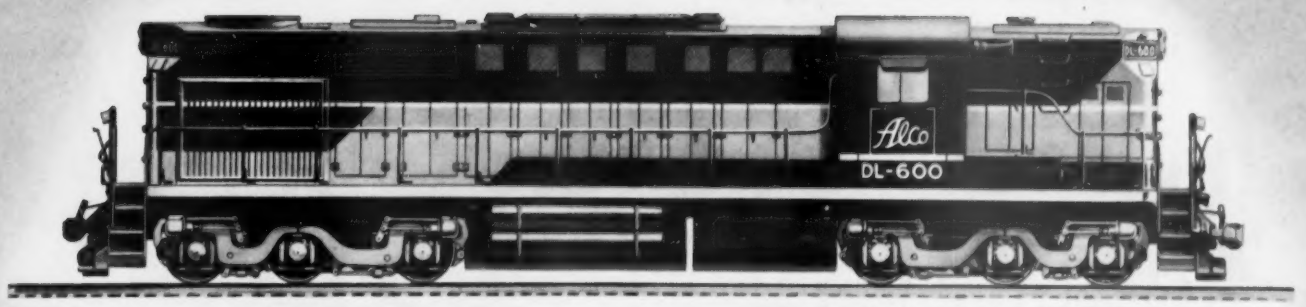
International
STEEL COMPANY

RAILWAY DIVISION EVANSVILLE 7, INDIANA

presenting...

The ALCO

DL-600



. . . the new high-speed, all-purpose locomotive
with the highest continuous and short-time tractive ratings
available on any diesel-electric locomotive unit today
. . . the most versatile locomotive ever designed

Alco

The New Alco DL-600 Gives You More Speed, More Power, Greater Versatility – At Less Cost

. . . in high-speed freight and passenger service . . . heavy-duty switching service . . . heavy-duty transfer service . . . mine haul service . . . hump service

This new high-output, all-purpose locomotive, the latest development in modern motive power, produces at 65 mph gearing the highest continuous tractive effort—79,500 lb—and the highest short-time tractive effort of any diesel-electric unit today. *Its single diesel engine, using one generator and one electrical system,* is the improved 16-cylinder V-Type Alco engine, conservatively rated at 2250 horsepower, providing parts interchangeability with other Alco locomotive engines. The DL-600 enables you to haul present tonnages at higher speeds and haul *heavier* tonnages at present speeds *with lower operating costs.*

2  DL-600's Will Normally

Do What 3  4-Motor

Units Will Do...With These Advantages:

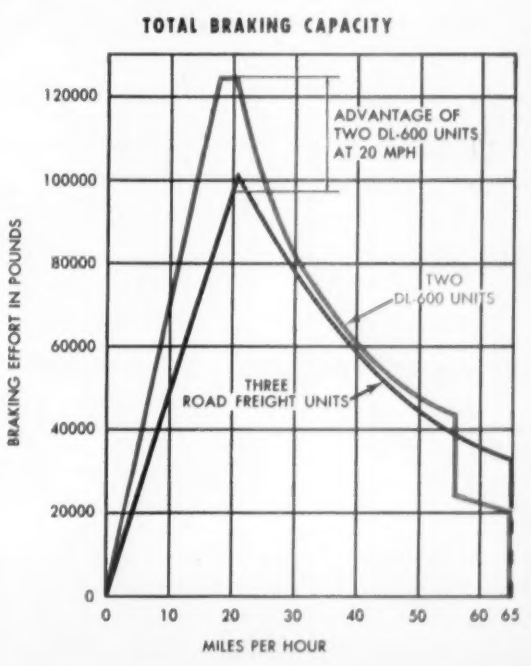
- ***SUBSTANTIALLY LESS ORIGINAL INVESTMENT*** — **Two Units to Buy Instead of Three**
- ***SUBSTANTIALLY LESS OPERATING COST*** — **Two Units to Operate Instead of Three**
- ***SUBSTANTIALLY LESS MAINTENANCE COST*** — **Two Units to Maintain Instead of Three**
- ***MORE POWER — TO DO MORE — AT LESS COST***
- **PLUS: 15% shorter length**
  Higher continuous tractive effort
  Same number of traction motors (12) in only 4 trucks
  25% more dynamic braking effort than three 4-motor units

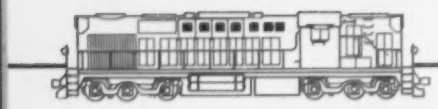
MORE BRAKING POWER AT ALL SPEEDS

The new DL-600 gives you (1) the greater flexibility of all-purpose design, (2) interchangeability of components with other Alco locomotives, and (3) the most powerful dynamic braking—3400 hp—on the road today.

At most speeds the DL-600 exerts approximately 75 per cent more dynamic braking effort than a standard freight unit of any other manufacturer.

At speeds from 18 to 65 mph the DL-600 exerts more dynamic braking effort than any other diesel-electric ever built. At 50 mph, for example—where capacity on some diesel-electrics may drop to zero—a single DL-600 still has an available braking effort of 24,300 lb.





The DL-600 cab is designed for the comfort and safety of the operating crew — with emphasis on roominess, visibility and low noise level.

ALCO DL-600 Condensed Specifications

Continuous tractive effort	
65 mph gearing	79,500 lb
75 mph gearing	69,800 lb
80 mph gearing	65,200 lb
Short-time tractive effort	107,400 lb for 4 minutes
Starting tractive effort	97,500 lb at 25% adhesion
Weight, maximum	390,000 lb
Weight, minimum	325,000 lb
Brakes	clasp type
Dynamic braking capacity	3400 hp max.
Height, maximum	14′ 8⅜″
Width, maximum	10′ 1⅝″
Length, inside knuckles	66′ 5″
Diesel engine—ONE V-type 16-cylinder turbosupercharged	2250 hp
Trucks	two 6-wheel, 3 motor
Wheel diameter	40″
Lube oil	250 gal
Fuel oil	1350 gal
Fuel oil, without boiler	2400 gal
Engine cooling water	280 gal
Sand	40 cu ft

MAIN COMPONENTS of the ALCO DL-600

Diesel engine . . . . . the improved Model 244 engine—now in service in thousands of Alco locomotives throughout the world . . . with new water-cooled turbosupercharger system, new hardened crankshaft.

Traction generator . . . . . interchangeable with generators on other Alco locomotives but with higher current capacity.

Traction motors . . . . . the same rugged, high-output motors installed on all Alco road locomotives.

Dynamic braking . . . . . highest capacity available anywhere . . . extremely compact blower-resistor assembly . . . automatic control.

Three-motor trucks . . . . . based on 12 years' design and operating experience . . . more than 1000 three-motor Alco trucks in service . . . all motors readily accessible for servicing.

For complete details on this *better motive power for greater earning power*, contact your nearest Alco locomotive representative.

Alco

AMERICAN LOCOMOTIVE COMPANY

Sales and Service Offices in New York, Chicago, Cleveland, St. Louis, San Francisco, and Washington, D. C.

the inside story of the chilled car wheel

a 10-year record of improved values

1941-1946 Improved Control of mottled iron formation, providing clearer chill at tread and more impact resistant gray iron backing.

1945 AMCCW plants adopt limitation on chill depth in rim.

1945 Rim thickness increased.

1947 More rigid inspection and standards for rotundity adopted for wheels shipped from AMCCW plants.

1950 New wheel design features heavier tread (stronger flange and rim) and more brackets (thicker, heavier, more continuous flange support).

1951 New wheel design advanced from "Recommended Practice" to "AAR standard."

In good supply • Available locally
Short-haul delivery • Reduced inventory
Low first cost • Low exchange cost
Increased ton mileage • High safety standards
AMCCW plant inspection • Easier shop handling

Quick, low-cost delivery of chilled car wheels from the AMCCW plant near you.

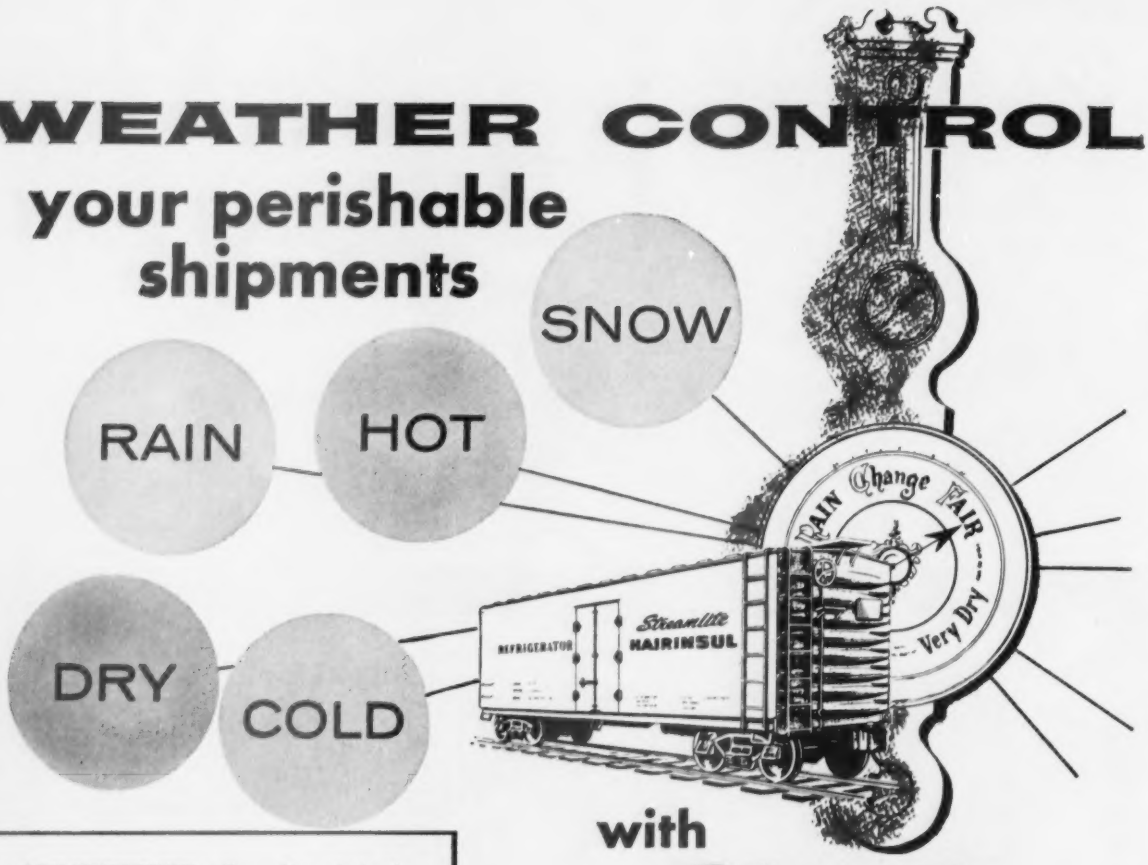
AMCCW

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

445 North Sacramento Boulevard, Chicago 12, Ill.

Albany Car Wheel Co. • American Car & Foundry Co. • Griffin Wheel Co.
Marshall Car Wheel & Foundry Co.
Pullman-Standard Car Mfg. Co. • Southern Wheel (American Brake Shoe Co.)

WEATHER CONTROL
your perishable shipments



with *Streamlite* HAIRINSUL

LOW CONDUCTIVITY . . . Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity —.25 btu per square foot, per hour, per degree F., per inch thick.

LIGHT WEIGHT . . . Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%.

PERMANENT . . . Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.

EASY TO INSTALL . . . Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall sections between fasteners.

COMPLETE RANGE . . . STREAMLITE HAIRINSUL is available ½" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings available.

HIGH SALVAGE VALUE . . . The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insulation offers a comparable saving.

Write to:
Merchandise Mart
Chicago 54

No matter how extreme or sudden the temperature change, STREAMLITE HAIRINSUL, the dependable all-hair insulation, gives maximum weather-control protection to vital shipments of perishables under all conditions.

For nearly half a century, major car builders have specified all-hair insulation because of it's greater efficiency and economy.

WHEN WEATHER PROTECTION COUNTS... you can count on STREAMLITE HAIRINSUL.

At left are still more reasons why leading refrigerator car builders insist on STREAMLITE HAIRINSUL. Complete data will be sent on request.

SETS THE STANDARD BY WHICH ALL OTHER REFRIGERATOR CAR INSULATIONS ARE JUDGED

There is only one Rust-Oleum

RUST-OLEUM®

STOPS RUST!

Specify Genuine Rust-Oleum
Accept No Substitute

The *exclusive* Rust-Oleum formula was developed by a Master Mariner during more than 20 years of combating the terrible rust-producing conditions of the sea. It incorporates a *specially-processed* fish oil vehicle that *dries*, is *odor-free*, and is formulated in *many colors*. It may be applied directly over *sound rusted surfaces* after scraping and wirebrushing to remove rust scale and loose particles. See why nearly every type of industry in the world has relied upon Rust-Oleum for over a *quarter century*. Clip the coupon to your letterhead and mail today.

RUST-OLEUM CORPORATION
2596 Oakton Street, Evanston, Illinois

Rust-Oleum Corporation
2596 Oakton Street, Evanston, Illinois
Gentlemen: I am interested in the *complete* Rust-Oleum story. Please send me the facts and the name of my nearest Rust-Oleum **Railroad Rust Prevention Specialist**

Name_____
Address_____
City_____ State_____

Standard's

Improved Dreadnaught End

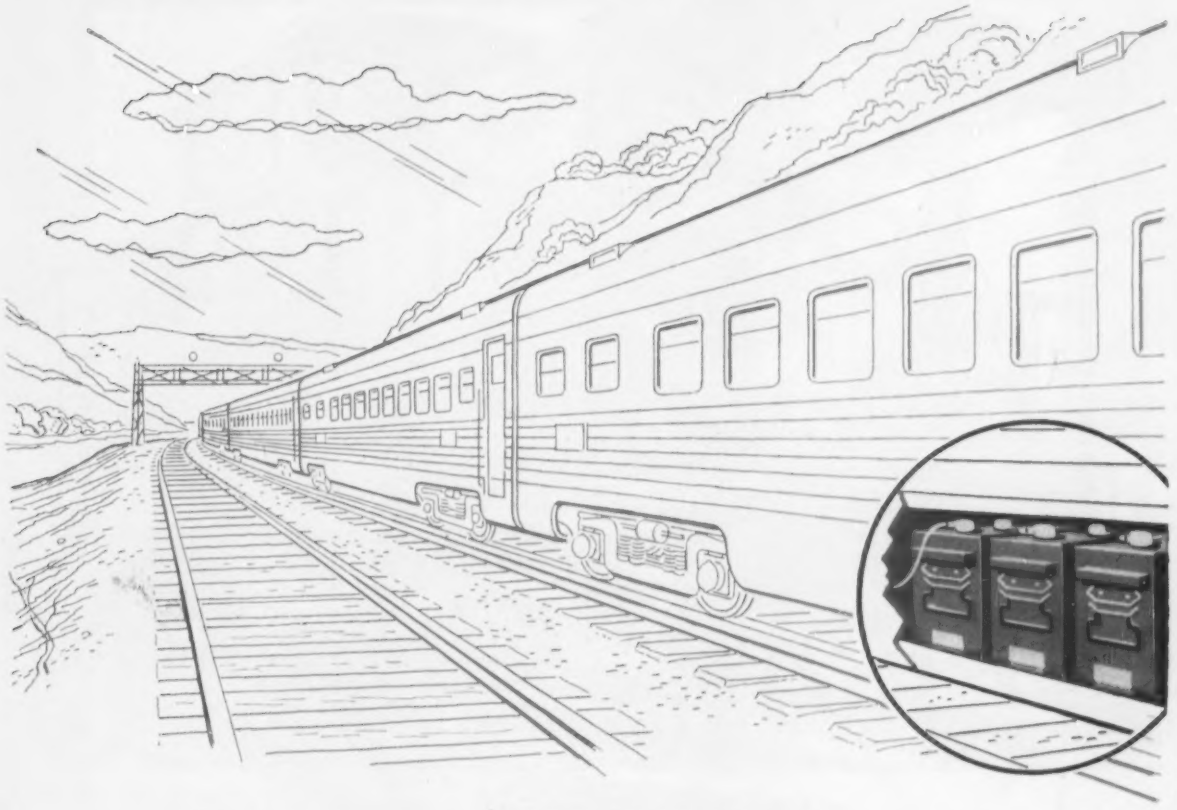
What *IS* a profit-producing freight car?
Railroading is a high fixed cost business
. . . net income cannot absorb revenue loss rapidly.
Thus a car that *initially* bolsters profits
but later costs money in repairs and time
out of service *finally* is a lifetime loss.
Standard components are *laboratory engineered*
to keep cars *on the line* producing railroad *profits*.

Standard

RAILWAY EQUIPMENT MANUFACTURING COMPANY

GENERAL OFFICE: 4527 Columbia Avenue, Hammond, Indiana
EXECUTIVE OFFICE: 310 S. Michigan Ave., Chicago 4
247 Park Avenue, New York 17 • First National Bank Bldg., St. Paul
582 Market Street, San Francisco 4.

when light weight **is important...**



specify EDISON

AS MUCH AS 2000 POUNDS LESS WEIGHT per car for modern passenger car service is just one of the economies gained by railroads using EDISON batteries! And yet, this weight saving means high strength for rugged service as well—with EDISON steel cell container and plate design—construction that assures extremely long life.

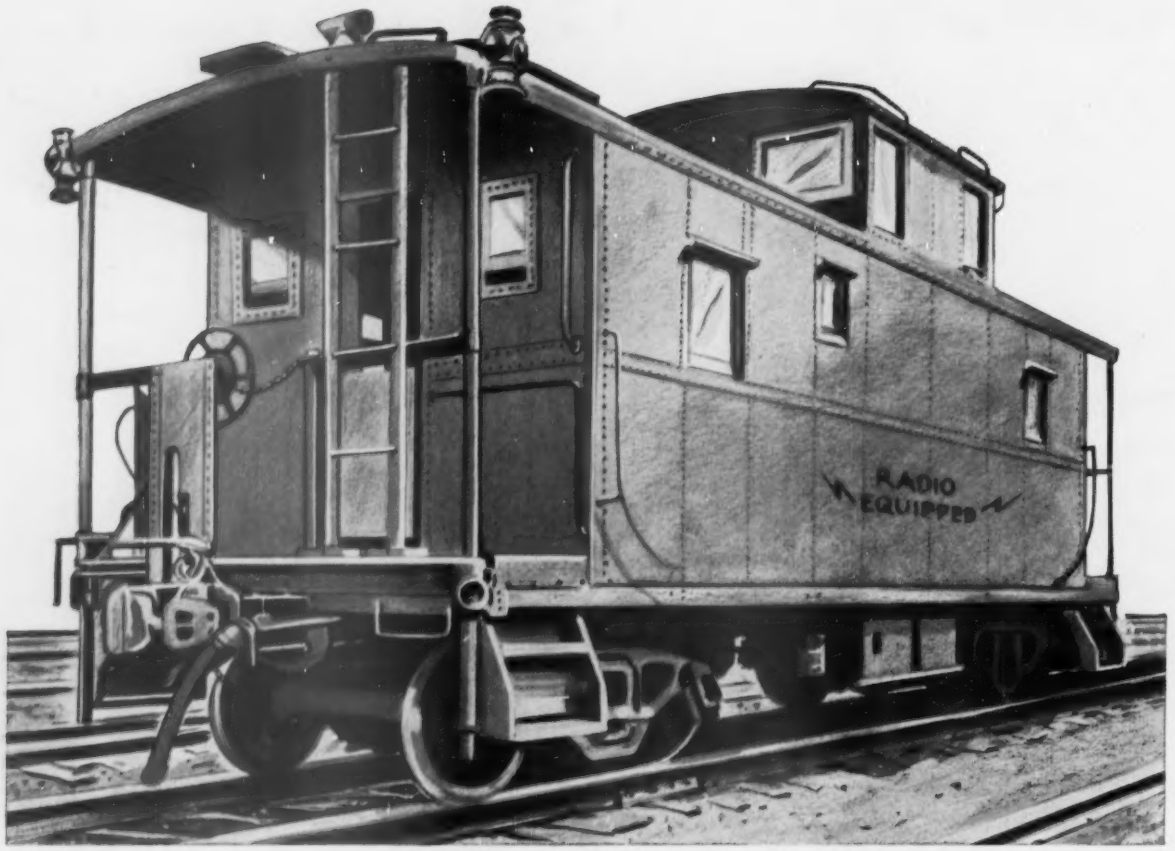
DEPENDABLE POWER on the road is an outstanding characteristic of EDISON batteries for air-conditioning, car-lighting and other modern electrical services on today's passenger-train cars. High road capacity, quick capacity recovery following discharge intervals and freedom from both finish-rate and discharge limits are just a few of the operating advantages of EDISON batteries.

LONG LIFE FOR TRUE ECONOMY has been the experience of both large and small roads who equipped their passenger, head-end, or caboose cars with EDISON batteries. Many report an average service life of 18 to 25 years. For the up-to-date facts on today's finest railroad batteries, write for your copy of Bulletin SB 3802 and the name of your nearest Edison field engineer. Edison Storage Battery Division of Thomas A. Edison, Incorporated, West Orange, N. J.

Most Dependable Power—
Lowest Over-all Cost
...you get both with an EDISON

EDISON
Nickel · Iron · Alkaline
STORAGE BATTERIES

EDISON ALSO MAKES THE FAMOUS "V.P." VOICEWRITER AND THE TELEVOICE SYSTEM



THIS IS A RADIO STATION ON WHEELS...

More than a caboose these days of modern and progressive railroading.

It's a radio station on wheels!

Saves time for shippers

Freight moves faster when a train is radio controlled. (On a scheduled 49 hour, 1,034 mile trip, one railroad figured radio telephone had saved as much as 4 hours and 20 minutes.)

Saves money for roads

With Bendix® Radio single track operations can be increased by as much as 75%. "Meets" are timed better . . . changes of meets made easily. Messages can be sent through even unattended stations. Break-in-twos are reduced. Paper work is reduced to a minimum.

Voice instructions between waystation operators, engineers, conductors and dispatchers speed up train time, lading classifications . . . and it's done day in and day out on every radio equipped train.

Pays its own way

It is far less costly than you think. Installation and maintenance does not differ substantially from conventional communication systems. The Bendix System morever, can be integrated with your present equipment.

To get all the facts, write to the nearest address below.

MANUFACTURERS OF CENTRALIZED RADIO CONTROL

Bendix Radio

® REG. U.S. PAT. OFF.

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Chicago Sales Office:
188 W. Randolph St.,
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West Coast Sales:
10500 Magnolia Blvd.,
N. Hollywood, Calif.

Export Sales: Bendix International Division
205 E. 42nd St.,
New York 17, N.Y., U.S.A.

Rugged and raring to go...

THANKS TO BATTERY POWER!

Today's air conditioning and lighting loads require batteries that have kept pace with the times—extra-reserve batteries that are ready and raring to go under the most severe service conditions. Gould Kathanode Batteries with new Diamond "Z" Plates give you this added reserve. Choose them and you increase car availability, cut maintenance costs, reduce yard charging and get maximum battery power dependability.

Specify
GOULD KATHANODE
BATTERIES
with New Diamond "Z" Grids
for Air Conditioning
and Car Lighting

GOULD RAILROAD BATTERIES

GOULD-NATIONAL BATTERIES, INC., TRENTON 7, N. J.

Always Use Gould-National Automobile and Truck Batteries

Current Publications

BOOKS

MATERIALS FOR PRODUCT DEVELOPMENT —1953. 265 pages, tables, graphs. Clapp & Poliak, Inc., 341 Madison ave., New York 17. Free to conference participants; $7.50 to others.

Contains the text of discussions at the first Basic Materials Conference held in New York last June. The conference—first of its kind—was attended by executives concerned with design, engineering and development of all types of consumer and industrial products. Papers ranged in scope from discussions of the newest kinds of materials, such as radioactive materials, titanium and zirconium, to new applications of such staples as steel, ceramics and wood. Many materials were considered not only from the viewpoint of their usefulness in end products but also with reference to the manufacturing process.

This book includes 18 papers covering such topics as engineering materials in today's business; materials and the future; materials and the atomic age; how to select and specify materials; new materials developments; how simplification and standardization can reduce materials cost; materials for high temperature service; materials for low temperature service; insulating materials; magnetic materials; high strength steels; aluminum; titanium; molded and extruded plastics; technical ceramics as basic materials; and materials for roller bearings.

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PROCEEDINGS—RAILWAY SYSTEMS AND PROCEDURES ASSOCIATION; 1953 WINTER MEETING. 126 pages, illustrations. Railway Systems & Procedures Association, 30 Church st., New York 7. $3.

The winter program of R.S.P.A. covered a number of broad subjects of interest to top—and departmental—managements, such for example, as: A panel discussion on getting and interpreting early financial statements for management; a description of a mechanized crew dispatching system, utilizing Teletype and punched cards, which also helps to produce a controlled payroll; evaluation of an information-handling (communication) system in quantitative terms; and the possibilities of using the relatively new science of "Operations Research" to determine realistic policies for cycling maintenance and replacement, measure efficiency of yard operations, and distribute empty cars economically.

That portion of the proceedings dealing with applications of Operations Research probably will be of special interest to operating officers. As yet unproved in railroading, Operations Research nevertheless does offer some

new approaches to solving some of the carriers' more perplexing problems. (One paper missing from these proceedings is that of the Cowles Commission on allocation of switching work in a system of classification yards." This will be printed shortly, according to officers of R.S.P.A., and will be sent automatically to purchasers of this volume.)

These proceedings cover in detail material sketched in outline in the November 16, 1953, *Railway Age*. In addition to formal presentations of speakers, questions asked of them and their replies also are included.

•

RAILWAY ADVENTURE, by L. T. C. Rolt. 176 pages, illustrations, map. Constable & Co., 10-12 Orange st., London, W. C. 2, England. (Available in Canada through Longmans, Green & Co., Toronto.) 21 shillings.

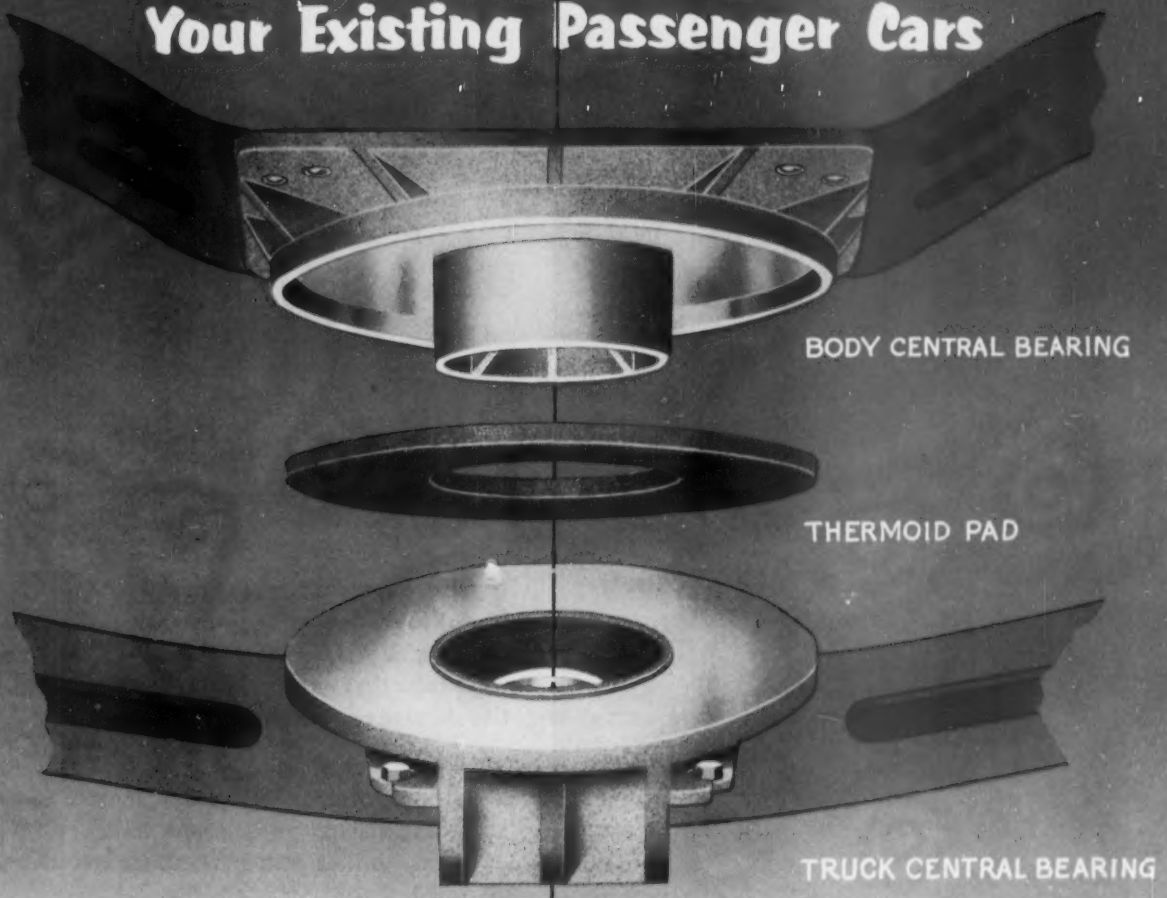
This is the story—which becomes more absorbing as it goes along—of how a group of British railway enthusiasts took over, rehabilitated, and made a going concern out of the little about-to-be-abandoned Talyllyn Railway in Wales—a 6½-mile, 2-ft. 3-in. gage line which, by some quirk of fate, escaped the attention of the socialists and bureaucrats when other British railways were nationalized. The story of the trials, tribulations and eventual success of the amateur and professional railroaders who combined their talents to keep the historic line in operation, both for genuine local service and as a holiday attraction for tourists, is amusing, gratifying, and at times inspiring.

PAMPHLETS

EVALUATING APPRENTICES. 24 pages. Bureau of Apprenti-eship, U.S. Department of Labor, Washington 25, D.C. Free.

What does it cost to train apprentices? To what extent do they pay for their training by work they accomplish during their apprenticeship? What is their potential value as journeymen after completing their training? How to figure out answers to these questions and how to determine the progress and ability of apprentices during their training are explained in this pamphlet. Set forth in it is an accounting system itemizing more than 50 cost and profit items involved in apprentice training; and also a series of forms for recording hours and grade ratings of apprentices as they progress step-by-step during their training, as well as summary forms for annual and final records. The booklet is designed primarily for training directors, members of joint apprenticeship committees and others responsible for training who wish to determine as exactly as possible the cost of training and the progress of apprentices

Improve the Riding of Your Existing Passenger Cars



with the

CENTRAL BEARING

Eliminates Lateral Shimmy — Increases Wheel Mileage

The new Central Bearing, developed by General Steel Castings, is now in service on several hundred cars and on order for many hundreds more. It provides a simple, proven way to assure smoother, more comfortable riding of your existing passenger train cars, and substantially reduces upkeep cost.

Truck shimmy and side bearing problems are eliminated with the Central Bearing, and mileage between wheel turnings is greatly increased.

The Central Bearing requires no lubrication.

Available in a simple, easy-to-install "package", Central Bearings may be readily applied to passenger train cars at small expense. They occupy the space formerly used by the center plates.

For the utmost in riding comfort, it will pay you to equip your existing passenger cars now with Central Bearings, and to specify them for your new equipment.

GENERAL STEEL CASTINGS

GRANITE CITY, ILL. EDDYSTONE, PA.

Section of track before treatment with S/V Agronyl R.

Same track 30 hours after first spraying.

After 4 weeks, right-of-way is clear, free of weeds.

Now! Control Weeds FOR LESS THAN $15 Per Mile!

S/V Agronyl R destroys all annuals, most grasses, many perennials with first application!

If you are spending more than $15 per mile (16-ft. width) to control weeds, you can save substantially by using *S/V Agronyl R*—Socony-Vacuum's new weed killer that was developed as part of a cooperative railroad research project.

This economical weed killer is applied at a rate of about 60 gal. per acre—depending on heaviness of growth. Including cost of a work train at $200 per day, you can thus destroy weeds for less than $15 per mile!

Tests by six leading railroads have proved the effectiveness of *S/V Agronyl R*. Applied in the spring when weeds are 6" to 8" tall, its killing action starts immediately on contact. Evidence indicates no plant resistance build-up. *S/V Agronyl R* requires just the usual spraying equipment, has a high flash point, presents minimum fire hazard.

Except where right-of-way has been badly neglected, *S/V Agronyl R* destroys all annuals, most grasses, many perennials *with the first application!* For full details, call your Socony-Vacuum representative.

Pictures taken at different points of same track.
Note house and tree (right) in each photo.

Socony-Vacuum Oil Co., Inc.

Railroad Lubricants

RAILROAD DIVISION

26 BROADWAY, NEW YORK 4, N. Y.

What's New in Products

Evans 6-Car Auto Loader

Two railroads will test new device designed to increase auto-car pay loads by 50 per cent

Designed to permit shipment of six automobiles instead of four by railroad car, the new Evans 6-Car Auto Loader illustrated above is said to have three advantages over the conventional method of rail shipment of autos: (1) Pay load is increased 50 per cent over conventional freight-car auto loads; (2) two railroad cars will do the work of three; and (3) through modification of present loading and unloading practices, the new Evans loader is expected to do much to increase railroad revenues from automobile shipments.

The 6-Car Auto Loader is built on a standard 53½-ft. flat car and is adaptable to 57½-ft. cars. Three autos are carried on the floor of the car and three on the second deck. The car can be loaded from either end of the car or from the side.

Autos may be driven aboard under their own power; wide entrances make loading easy and reduce both loading and unloading time.

When the loader is ready to receive autos, the powered hoists (which can also be operated manually) raise the split elevating ramp into position to form a solid incline from bottom deck to upper level. The first auto is driven to the top of the ramp. The hoists then raise the upper section of the ramp level with the floor of the second deck and the auto is backed to the opposite end of the car. The second auto is loaded in the same way, and when the third car is raised to the upper deck, the elevating ramp remains locked in "up" position to provide a floor for the third auto. Four arms lock the ramp in place as an added safety factor.

Cars carried on the bottom level are driven aboard and positioned normally. Auto Loader cars can be end-loaded and autos driven from flat car to adjacent cars can be "circus" loaded—loaded in a continuous line from car to car.

Accessory crossover ramps are available to link one Auto Loader car to the next. By using the ramp in the first Auto Loader car, autos may be "circus" loaded on top deck as well as bottom level.

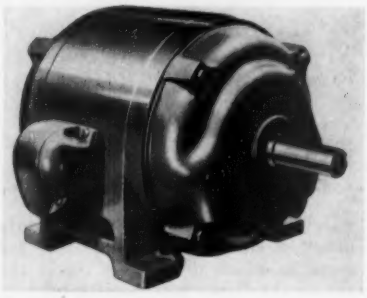
When not in use as an auto carrier, the new Auto Loader can be used to carry many types of freight normally shipped on flat cars.

The 6-Car Auto Loader is designed to conform to A.A.R. Car Construction Committee requirements and to those of the Interstate Commerce Commission.

The chain tie-downs used to secure the autos when in transit can be operated and adjusted with hand-operated brace or by motor, thus speeding up loading and unloading time. When tie-downs are not in use, they are stored in a pocket in the floor of the car.

Dimensions of the new Auto Loader are: Length, 53 ft. 6 in.; height, empty, 14 ft. 3 in.; height, loaded, 15 ft. ½ in.

The first 6-Car Auto Loader is being released to the New York Central for performance tests. Another is also being built for use by the Union Pacific •



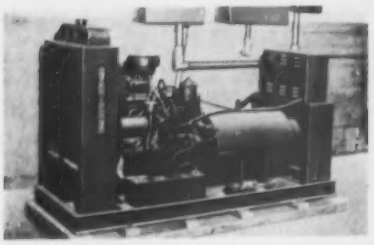
Improved A.C. Motor

An a.c. electric motor which incorporates a number of new features and which conforms with N.E.M.A. specifications is announced by U.S. Electrical Motors Inc., Los Angeles, Cal. With improved electrical characteristics, the motor, designated as Uniclosed, Type H, is more compact than previous models. It is of drip-proof design and also offers splash-proof protection without increased cost. The frame is solid, one-piece cast iron and the stator is prewound. Frame sizes 182-184 are now available.

By utilizing the interior space to better advantage, the same horsepower is said to be embodied in less space. The end brackets are of new design with air intakes so arranged as to prevent intrusion of water, yet allow liberal air flow into the motor for two-way ventilation. Baffles of a new design within the air vestibules of the end brackets prevent splashings from entering and coming in contact with the windings.

The motor in its various ratings is said to meet the same standards as the former type in temperature rise, torque, etc. Overload capacity has not been reduced. The slot design of the laminations has been improved and the asbestos-protected windings are reported to be reinforced and strengthened by the addition of Mylar laminations. The split-dome cast iron terminal box is designed to make the leads more accessible. A stainless steel data plate set above the box presents a rustproof surface with legible durable instructions. Air impeller blades on the rotor ends have been redesigned with curved edges for quieter operation. All castings are normalized. Lubriflush lubrication of the bearings provides means of replacing old grease with new without dis-

assembling the motor or disturbing the bearings. The air intake is designed to avoid pickup of dirt and dust from the floor •



Automatic Standby Power Plant

The Ready Power Company, 11231 Freud Ave., Detroit 14, has introduced three engine generators, powered by Chrysler industrial engines, rated respectively at 50, 30 and 20 kw.

Features include sodium-cooled exhaust valves, air-cooled generator, a by-pass thermostat cooling system, down-draft carburation, microbabbitt bearings, and superfinished bearing surfaces. A heavy base of welded structural steel is incorporated in the design for easy installation and permanent alinement without need of a special foundation.

Each unit is a complete, packaged electric power generating plant ready for operation. Engine and generator controls are located in a single, simplified cabinet.

The units are designed for either standby or continuous service, and may be equipped for fully automatic emergency standby service •

Contact Welding Electrode

A new contact electrode which may be held in contact with the surface to be welded has been announced by the Welding Department of General Electric Company, Schenectady, N. Y.

Best suited for work on mild and medium carbon steel, the rod is designed for welding machinery, low pressure storage tanks, and light structural work. The manufacturer reports that the electrode consistently produces a higher rate of weld footage than conventional electrodes. The quantity of deposited metal is said to exceed some manual automatic processes.

Encased in a rutile-type covering enriched with iron powder, the rod can be used on horizontal and flat position fillets and laps, single and multiple pass butts, and deep grooves and cover passes on multiple-pass butt welds.

Since the electrode is of the contact type, less physical effort is expended in welding and less welding skill is required •

New 7,500 lb. Towing Tractor Being Offered by Clark

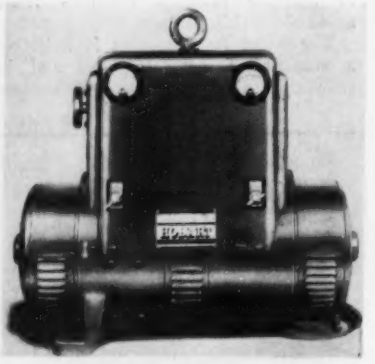
A field-tested heavy-duty tractor with a maximum drawbar pull of 7,500 lb. is now being offered by the Clark Equipment Company, Battle Creek, Mich. Known as the "Clarktor 75," the new unit is designed for general purpose industrial applications.

The combination of an 82-hp. Chrysler 6A engine, fluid coupling and a planetary type drive axle provide ample power for heavy duty operations as well as delicate handling to prevent damage, the manufacturer states. It is equipped with 4-wheel brakes. Features stressed by the maker are steering ease, ease of entrance and exit from the unit by the driver, and attractive appearance •

Constant-Voltage D.C. Arc Welder

A constant voltage type d.c. arc welder designed for welding with inert-gas shielded-arc, the submerged arc, and other automatic processes is announced by Hobart Brothers Company, Troy, Ohio.

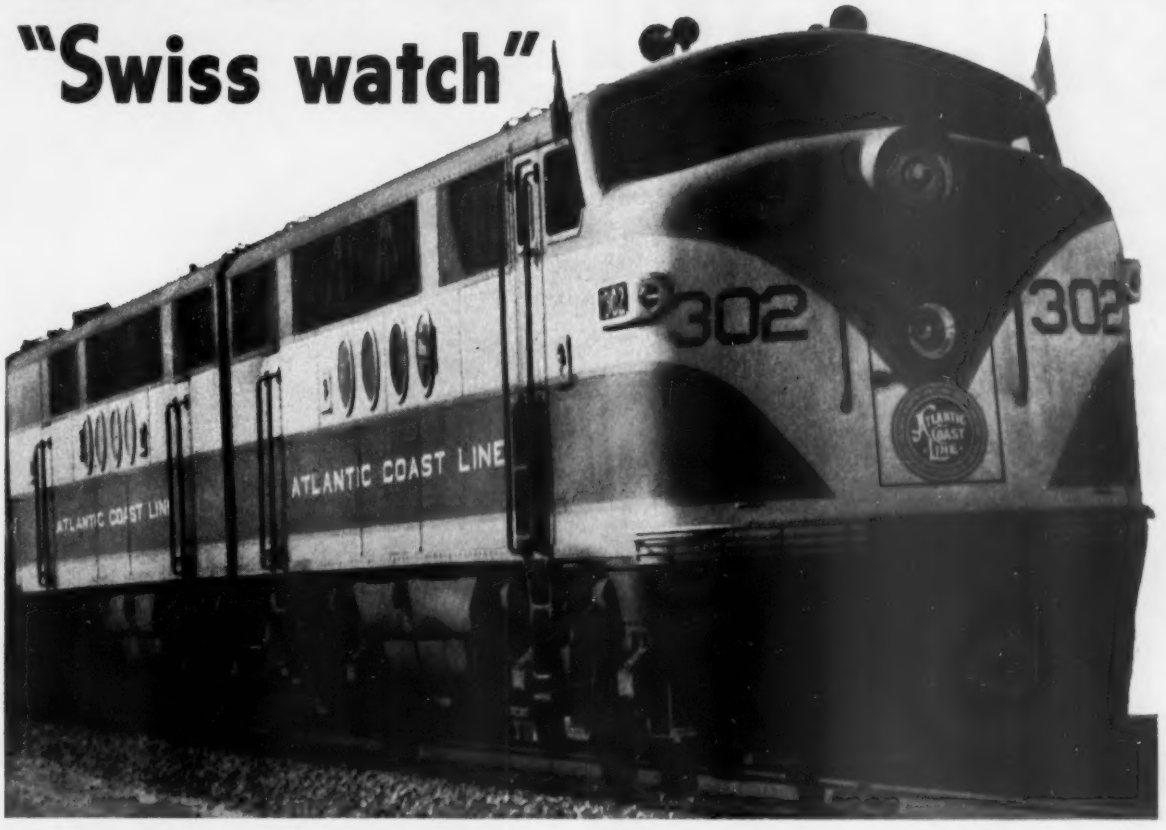
The hand wheel on the side of the control cabinet lets the operator set the machine for the desired arc voltage, which remains constant at varying current values. This is made possible by separate excitation and compounding to provide a very high short circuit current value. As soon as the welding wire strikes the work, enough current then flows to cause the arc voltage to correspond to the pre-set generator voltage. When used with a process wherein the wire is fed continuously into the weld, the machine automatically controls the current by



maintaining the voltage at the established value, without regard to the speed at which the wire is fed to the arc.

The oversize exciter provides full 1-kw. 110-volt d.c. power in excess of that required for excitation purposes. A double receptacle on the side of the control cabinet makes this power available for operating certain types of automatic welding equipment •

300 TON "Swiss watch"



Although massive and tremendously powerful, the diesel locomotive is a finely tooled, precision-built machine. That's why there is a wide variety of Esso Railroad Lubricants, each prepared to service a particular group of working parts, and each tailor-made to assure peak efficiency.

Like Esso Railroad Lubricants, Esso Diesel Fuel is a product carefully developed and laboratory-tested for diesel locomotives... it has proved itself by top performance through millions of miles in actual use.

For high-quality, dependable fuels and lubricants, specify Esso Railroad Products.

Like *All* Esso Railroad Products These Assure You Dependable Performance

Diesel Fuels
ESSO ANDOK Lubricants—versatile greases
ARACAR—journal box oils
ARAPEN—brake cylinder lubricant
ESSO XP Compound—hypoid gear lubricant
DIOL RD—Diesel lube oil
COBLAX—traction motor gear lube
VARSOL—Stoddard Solvent
SOLVESSO—Aromatic solvent
ESSO Weed Killer
ESSO Hot Box Compound
AROX—pneumatic tool lube
CYLESSO—valve oil
ESSO Journal box compound
Asphalt
Cutting Oils
Rail Joint Compounds
Maintenance of Way Products
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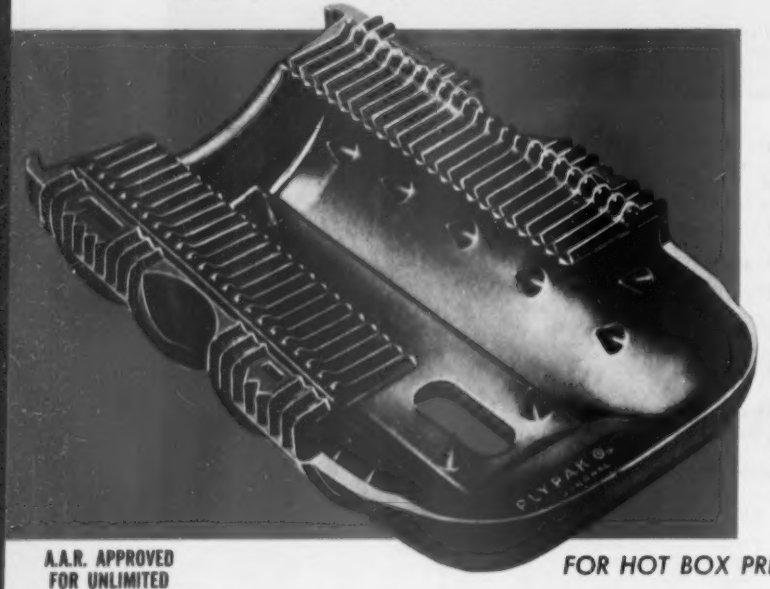

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Suppose Railroading Were a New Industry . . .

A useful test—to shed light on the effectiveness of industry policy in solving its current problems—might be to compare the course actually being followed with the pattern that the industry would probably be pursuing if its business were a brand-new one. For instance, if railroads were as new as television is, what are some of the things they are now doing which they wouldn't be doing; and what are some of the things they aren't doing that they probably would be doing?

It is not mere day-dreaming to put imagination to work on such questions, because this process is one way to get the spotlight onto some courses of action that may be widely at variance with present-day realities. It is not possible, of course, to erase history—but it is, at least, helpful to know what the goals are that would square best with today's facts, even if these goals are not immediately attainable.

For instance, it seems safe to assume, if railroads were only now being built, that the first ones would go in where there are bulk commodities to be hauled and where trailer-truck costs of 3 or 4 cents a ton-mile would be prohibitive. When the original railroads were built a century and a quarter ago they went to work under a rate "ceiling" of some 20 cents per ton-mile (the cost of moving freight by horse-drawn wagon). As a consequence, railroads were built into a lot of thin traffic situations which they would not have entered if the "ceiling" had been lower.

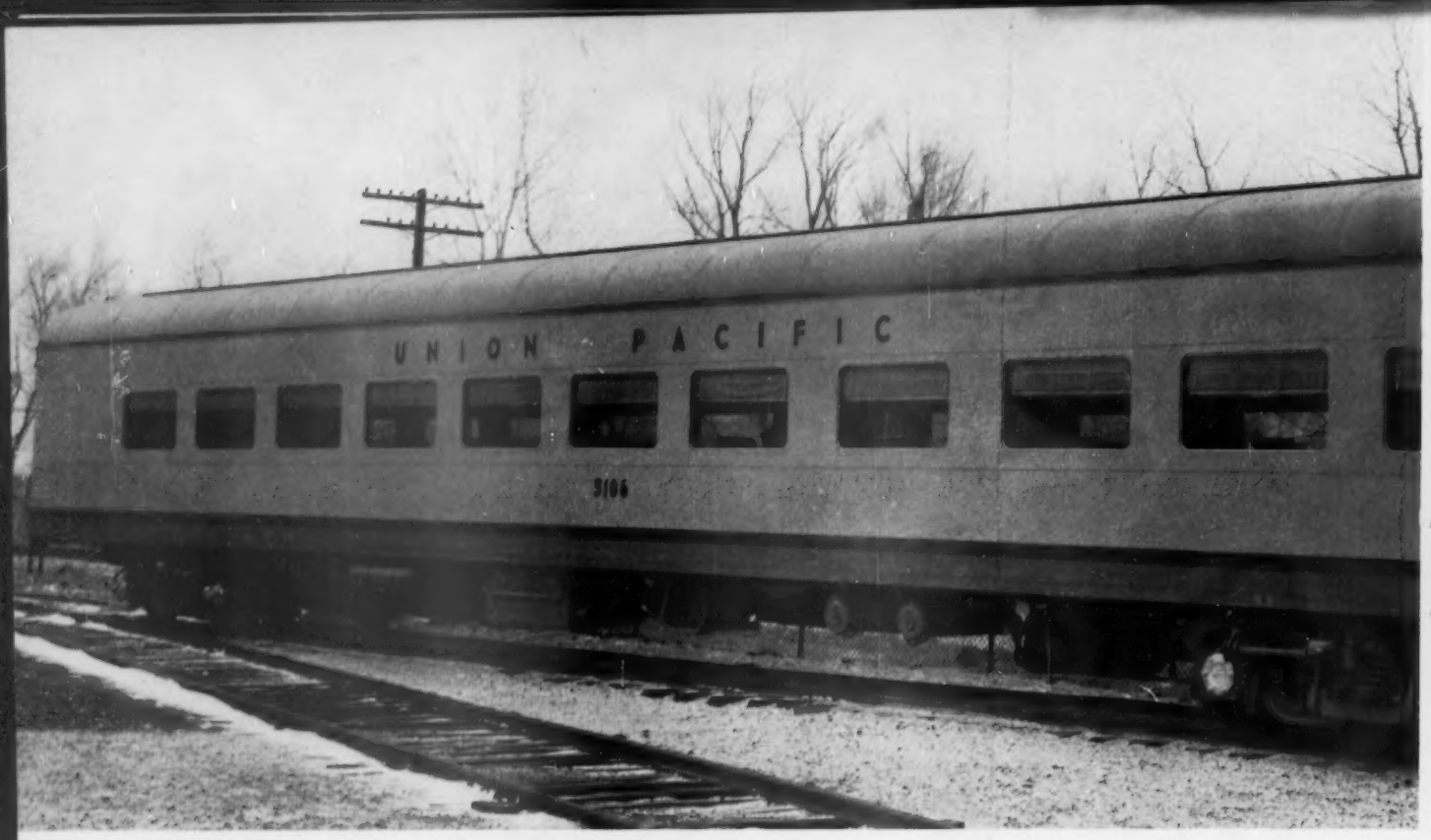
If railroads were built new today, they would be built only for handling prospective heavy traffic, and where they could keep costs on all traffic safely at only a fraction of trucking costs. There would doubtless be less railway mileage than there now is, but average costs would be so low (with no "thin" lines or retail and local services to raise the average) that it would be impossible for any other form of transportation to compete price-wise with the railways. Railways built and operating on such a strong basis of favorable costs, even with less route mileage, might well be imagined as handling even more traffic than now moves by rail.

Such railways would not be offering a "stand-by" facility for any shipper. They would be built to serve large industrial plants, only where the plants concerned would contract to make full use of the service (as large users of electric power now make such contracts with the power companies, before these companies will install the generating capacity to serve them).

Railways built under such conditions would not have much of a problem to face with private and contract transportation. Railways like this, built at the outset to serve mass movements of bulk commodities, would soon prove attractive to all heavy freight movement between centers of population, but without being tempted into retail and short-haul business. Operating well under a "ceiling" of 3 or 4 cents per ton-mile as truck costs, these railroads could easily capture the bulk of all intercity traffic (either in their own cars or by hauling the trailers themselves). Even as it is now, railroads would have no serious competitor for freight movement in quantity—except to the degree that their pricing fails to be competitive, and where their costs are artificially burdened with the expense of providing a lot of retail services for which railroads are not economical.

It is as certain as anything can be that, if railroads had come into being with a rate "ceiling" of 3 or 4 cents—instead of 20 cents—over them, they would never have gone very far in using the value of a commodity as an element in rate-making. This practice, inherited from the past—and the consequent (now unrealistic) demand that "market relationships" be preserved in the rate structure—is one of the chief hindrances to present-day railroad prosperity and maximum public service. Another bequest from history, of similar questionable present-day value, is rate regulation. Considering the highly competitive nature of transportation today, if the railroads were new on the scene, the idea probably would not occur to anybody that their charges should be regulated.

History has given the railroads some burdens which no longer serve a useful public purpose and from which the industry should be released. But history has also given the railroads some advantages—not the least of which is rights-of-way located in built-up areas which, at today's land values, could not be touched. It would be helpful if more people (shippers and regulators and legislators—and not railroad men only) would spend some time looking at some of the things the railroads are required to do, not because of present need but solely because of conditions long since past, and continuance of which under present conditions is injurious alike to the railroads and to the public interest.



DINING CAR. Note the drawbar which is pin-connected in a drawbar pocket in the bolster casting of the kitchen-dormitory car.

MORE ALUMINUM ALLOY

Passenger Cars for the UP

One hundred twelve chair cars, diners, sleepers, dome cars of three types, and head-end cars of two types now being delivered by American Car & Foundry Co.—Eight cars of two types also going to CN&W

The Union Pacific is receiving from the American Car & Foundry Co. 112 passenger-train cars of eleven types. Thirty-eight chair cars, 14 open-section sleepers, two dining-room cars and two kitchen-dormitory cars (operating as two-car units), 33 baggage cars, and two postal-mail-storage cars have already been delivered. Two five-bedroom, two-compartment, two-drawing-room cars; four lunch-counter diners; five dome coaches; five dome-observation cars; and five dome diners will be delivered later. In addition, the Chicago & North Western is participating in the provision of equipment in trains jointly operated with the UP, having purchased from the same builder six chair cars and two head-end cars.

WEIGHTS OF THE PASSENGER-TRAIN CARS

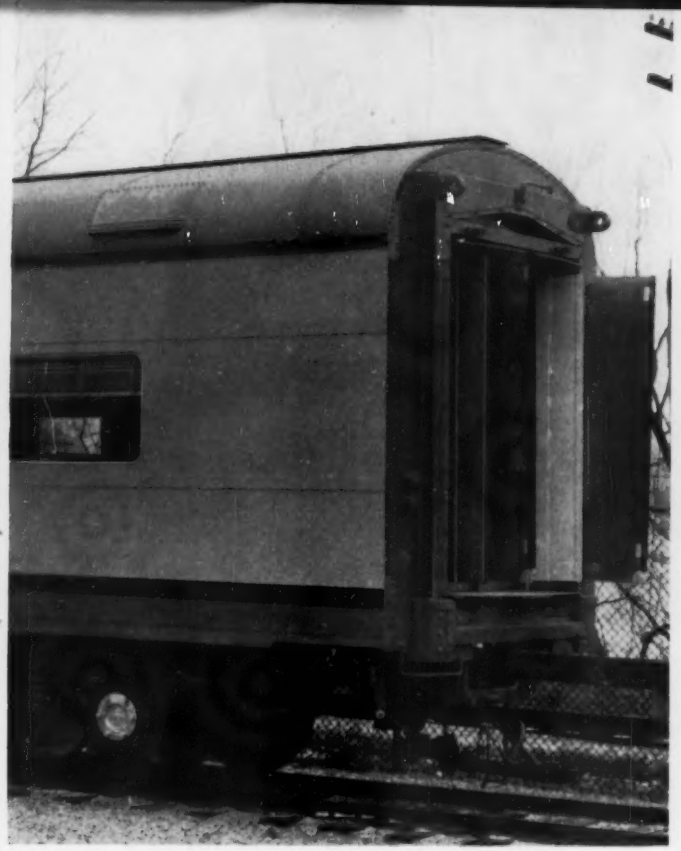
UP baggage cars	130,440
UP diners (half of twin unit)	130,540
UP kitchen-dormitory (half of twin unit)	143,000
UP chair cars	134,680
C&NW chair cars	139,000
UP open-section sleepers	151,800

Some of the new cars are assigned to the two re-equipped "City of Denver" train sets which went into service on January 10. For the two trains the assignment includes two baggage cars (one from each railroad); four coaches from the C&NW order, the two UP twin dining-kitchen cars, and two of the UP 14-section sleepers.

Each chair car seats 44 passengers in Sleepy-Hollow double coach seats with leg rests. In 30 of the UP cars the seats also have adjustable head rests. Men's and women's lounges and toilets are at opposite ends of each car.

The Full-Length Diners

The dining-room cars have tables for 66 persons. The main dining room has seven tables for four persons on one side and seven for two persons on the opposite side. A smaller compartment at the end next to the kitchen car has four tables, each seating four persons in the customary dining chairs, and two tables each of which seats four persons, three at a corner sofa and one in a



THE DINING ROOM as viewed from the kitchen end of one of the Union Pacific's new dining cars.

A DISPLAY CASE is set in the wing partition at the end of the dining room.

dining chair. Adjoining this compartment is a waiting lounge with built-in settees for six persons. Between the lounge and the end of the car are lockers and a steward's desk. At the opposite end of the car are a steward's desk and linen locker. A transverse wing partition between the desk and the linen locker separates the dining-room lobby from the end of the car. An ornamental display case in the partition, with glass on both sides, is in line with dining-room aisle and the end door of the car.

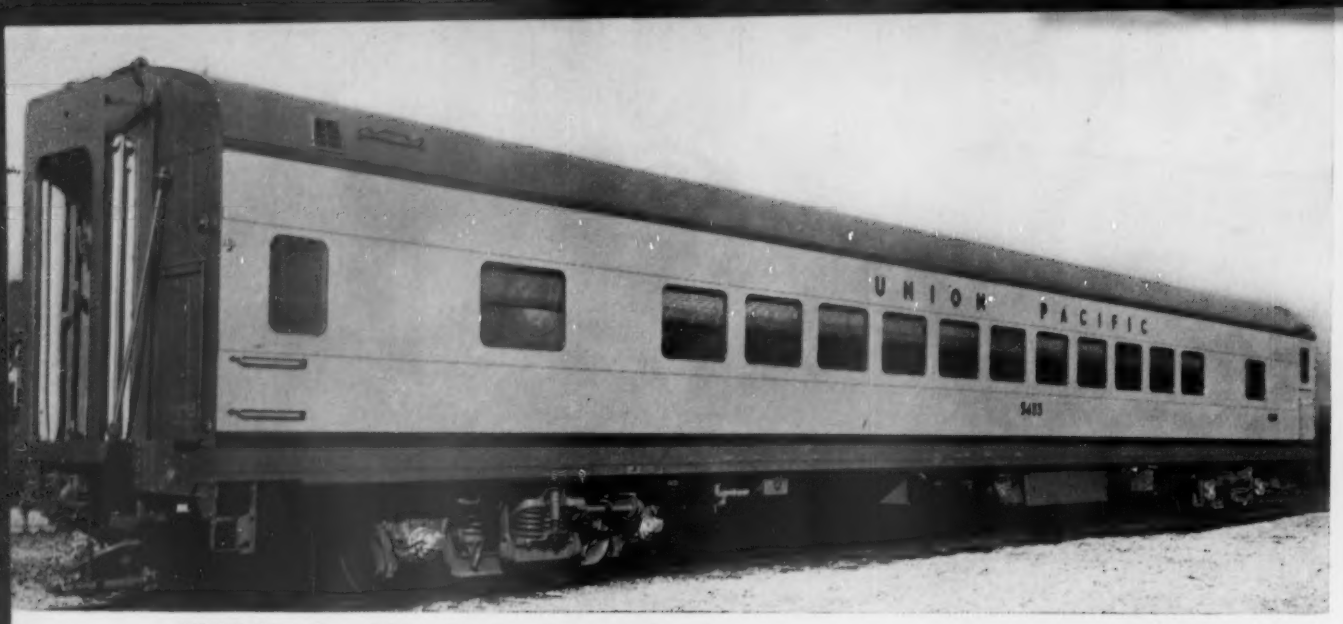
The kitchen and pantry in the kitchen-dormitory car occupy a space 34 ft. 3 in. long. About 13 ft. 4 in. of this is pantry.

The principal equipment in the kitchen and pantry are Stearnes Presto-log coal-fired range and broiler and Stearnes steam table. There are two two-gallon coffee urns, two soup jars, a two-compartment steam cooker, and a Savory gas toaster. With the exception of the fish box and kitchen chill box, which are cooled with water ice, all refrigerators in the kitchen and pantry are cooled with dry ice with Carbofrezer two-temperature control.

Separated from the kitchen by a cross passageway are the dormitory facilities. These are a steward's room and three crew rooms, the latter each accommodating six men in two three-tier bunks. The steward's room has a transverse sofa with an upper berth above, a clothes locker, an enclosed toilet and a folding wash basin. Under the window in each crew room is a folding wash basin. There are two toilet rooms at the end of the car.

Each dining and kitchen-car pair is coupled with a single drawbar which is pin-connected at each end to a drawbar pocket in the combination bolster and buffer casting. The doorways in the adjoining ends of the two

SLIDING DOORS close the kitchen end of diner. Writing lounge, steward's desk are behind bulkhead. ▶



CHAIR CAR. One of 38 such units to be received by the Union Pacific from the American Car & Foundry Co.

cars are approximately 4 ft. wide and are closed by biparting sliding doors. The doors are opened by National Pneumatic operators actuated by foot pressure on a large treadle in the floor. The doors in both cars can be locked in either the open or closed position. Regular end doors on all cars are sliding type operated by National Pneumatic door-operators.

Water for the dining car is supplied from a 200-gal. tank underneath the car. There are two 200-gal. supply tanks underneath each kitchen car and a divided 160-gal. tank overhead in the kitchen. The hot-water portion of this tank has a capacity of 15 gallons and is connected to a hot-water coil in the range.

Fourteen sleepers have 14 open sections and men's and women's lounges at opposite ends of the car. Two sleepers, for later delivery, have five bedrooms, two compartments, and two drawing rooms.

Decorative Schemes

Three different color combinations were employed in the coach decorations. Fourteen of the UP cars and three for the C&NW are in a combination of light gray and blue, with rust upholstery. The other three C&NW cars have the same ceiling and wall colors, but the upholstery is woodtone. Twelve of the UP cars are in ivory, rose, blue-green, and blue, and twelve in a combination of green, gray, tan, and brown.

The dining cars are decorated in tones of green, gold, and maroon. The ceiling and venetian blinds are a green tint. The frieze-panel pattern, in blue green, yellow and burnt orange on Kaliston, is symbolic of the four states through which the "City of Denver" operates. The pier-panel drapes are in gold; the leather upholstery of the chairs, dark crimson and rose, and the carpet, maroon.

The panels of the wing partition and the partition in the lobby beyond the main dining room are a Chinese rice-paper design in tones of blue-green and gold. The end partitions of both rooms are of Micarta decorated with black line drawings, highlighted with white molded into the Micarta Truwood Prima, also symbolic of the states through which the trains operate.

The predominant interior color of the open-section sleeping cars is light blue with rust upholstery and rust and light blue tones in the Chinese rice paper design overprinted on the beige Micarta section partitions. The section curtains are gray.

Windows in the dining cars, the dormitory of the kitchen car, the passenger compartment of the chair cars, and the sleeping cars are Adams & Westlake extruded aluminum breather sash, with ¼-in. safety glass inside and ¼-in. Solex glass outside.

PARTIAL LIST OF MATERIALS AND EQUIPMENT ON THE NEW CARS

Truck parts and platform center sills	General Steel Castings Corp., Granite City, Ill.
Sound-deadening material	Fabreeka Products Co., Boston. United States Rubber Co., New York.
Side bearings (head-end cars)	Railway Products Corp., Chicago.
Center plate wear plates:	
UP	Thermoid Co., Trenton, N. J.
C&NW	Gatke Corp., Chicago.
Insulmat	J. W. Mertell Co., Kankakee, Ill.
Equalizers	Camden Forge Co., Camden, N. J.
Equalizer springs	American Locomotive Co., Railway Steel Spring Div., New York.
Swing hangers	Farrell-Check Steel Co., Sandusky, Ohio.
Swing-hanger pins	Manganese Steel Forge Co., Philadelphia.
Safety locking center pins	W. H. Miner, Inc., Chicago.
Wheels	Bethlehem Steel Co., Bethlehem, Pa. Edgewater Steel Co., Pittsburgh. United States Steel Co., Pittsburgh.
Axles	Bethlehem Steel Co., Bethlehem, Pa. Standard Forgings Corp., Chicago. United States Steel Co., Pittsburgh.
Roller bearings:	
UP	General Motors Corp., Hyatt Roller Bearing Div., Harrison, N. J.
UP and C&NW	Timken Roller Bearing Co., Canton, Oho.
UP (25 baggage cars)	SKF Industries, Philadelphia.
Couplers	National Malleable & Steel Castings Co., Cleveland.
Coupler carrier spirng	American Spring & Wire Specialty Co., Chicago.
Upper buffer device	Standard Railway Equipment Mfg. Co., Chicago.
Draft gear	Waugh Equipment Co., New York.
Shock absorbers	Houdaille-Hershey Corp., Buffalo.
Air brakes:	
UP	New York Air Brake Co., New York. Westinghouse Air Brake Co., Wilmerding, Pa.
C&NW	Westinghouse Air Brake Co., Wilmerding, Pa.
Decelostats	Westinghouse Air Brake Co., Wilmerding, Pa.
Disc brakes (UP)	Budd Co., Philadelphia.
Brake shoes (C&NW)	American Brake Shoe Co., New York.
Hand brakes	National Brake Co., New York.
Clasp brakes (C&NW)	American Steel Foundries, Chicago.
Grip nuts	Grip Nut Co., Chicago.

EACH OF THE CHAIR CARS seats 44 passengers. The UP cars are equipped with radio, wire-recording and public address systems.

MEN'S LOUNGE in one of the coaches. Chair cars have 8-ton air conditioners.

The interiors of these cars are finished on the wainscot, end linings and in the toilets and lounges with ¼-in. tempered Presdwood. Head linings are flat aluminum sheets, with slip joints. In the dining cars the frieze panels are ¼-in. waterproof plywood, Kalistron covered; the pier panels, tempered Presdwood with cloth drapes. In both the UP and C&NW chair cars the pier panels are of corrugated aluminum, Kalistron covered with a silk screen printed in an allover pattern. Frieze panels are of tempered Presdwood. Stainless steel is applied to the wainscot in the passageways, on both sides of the lounge partitions, on the locker doors, outside the toilets, and on the end partitions of the chair cars.

Partitions and bulkheads in the chair cars are ½-in.

AIR CONDITIONING—HEATING—WATER SUPPLY

The UP chair cars have the Safety electromechanical air conditioning system of 8 tons' capacity. Sectional evaporators provide for modulated cooling. On the UP dining cars and sleepers and on the C&NW chair cars the equipment is Frigidaire of the same capacity, with evaporators divided into two equal parts for modulation. All condensers are of the full-flooded type. Cool air enters the passenger compartment of the chair cars and the dining room of the dining cars through Multi-Vent ceiling panels. In the men's and women's lounges and passageways Anemostats are employed. There are four Anemostats in the passageway of the kitchen-dormitory car. Air enters the dormitory rooms through multilouvered registers.

The passenger-carrying cars are heated by a combination of thermostatically controlled fin-tube floor radiation and overhead heat from a heating coil in the air-conditioning evaporators. In the six C&NW chair cars, in 18 of the UP chair cars, and in the two 5-2-2 sleepers, the floor heat controls are Minneapolis-Honeywell. In the remaining 20 UP chair cars and the section sleeping cars, dining cars and kitchen cars the controls are Vapor.

The baggage cars of both roads have the Vapor manually controlled system of steam heat in copper fin-tube radiation, with the addition of two Vapor unit type blower heaters, each with a separate manually controlled steam valve and separate blower switch. The postal-mail-storage cars have the manually controlled fin-tube radiation in the baggage compartment with Vapor thermostatically controlled copper fin-tube radiation in the railway post-office compartment.

The chair cars and sleepers have a water supply of 400 gallons contained in two interconnected under-body tanks. The built-in drinking-water coolers have a compartment for cooling bottled milk.

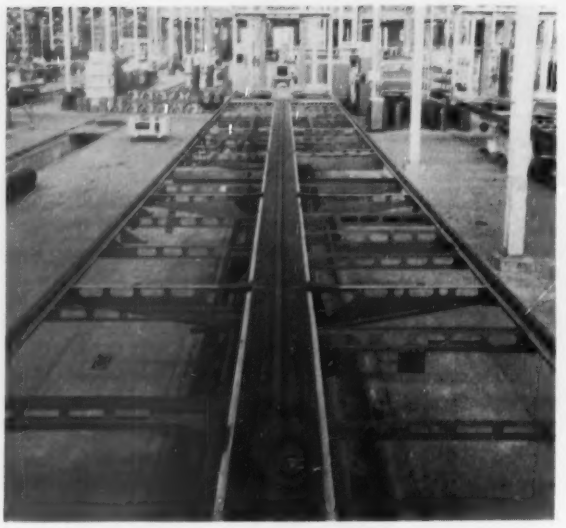
Aluminum rivets and castings; roof and side sheathing	Aluminum Co. of America, Pittsburgh.
Steel castings	Lebanon Steel Foundry, Lebanon, Pa.
Diaphragms and hoods; sash	Adams & Westlake Co., Elkhart, Ind.
Sash glass	Pittsburgh Plate Glass Co., Pittsburgh, Pa.
Window glass in toilets	Pressed Prism Plate Glass Co., Morgantown, W. Va.
Step treads; end door threshhold	American Abrasive Metals Co., Irvington, N. J.
Trap doors	O. M. Edwards Co., Syracuse, N. Y.
End bulkheads	U. S. Plywood Corp., New York.
Plywood and metal-faced plywood	Haskelite Manufacturing Corp., Grand Rapids, Mich. Met-L-Wood Corp., Chicago.
Presdwood	Masonite Corp., Chicago.
Kalistron panels	Mengal Co., Plywood Div., Louisville, Ky.
Blind rivets	Huck Manufacturing Co., Detroit.
Insulation:	
UP	Gustin-Bacon Manufacturing Co., Kansas City.
UP and C&NW	Johns-Manville, New York.
Snap-on moldings	Pyramid Mouldings, Inc., Chicago.
Flooring and cement	Armstrong Cork Co., Lancaster, Pa.
Composition floor	Tuco Products Corp., New York.
Asphalt paper	Lehon Co., Chicago.
Rubber floor sheeting	Beck & Blatchford Co., Chicago.
Floor covering	Goodyear Tire & Rubber Co., Akron, Ohio.
Sheet rubber; carpet cushion	United States Rubber Co., New York.
Window guards	Ellcon Co. New York.
Kitchen side loading doors	Moynahan Bronze Co. Flat Rock, Mich.
Door operators	National Pneumatic Co., New York.
Alumilastic	Parr Paint & Color Co., Cleveland.
Enamelite	Presstite Engineering Co., St. Louis.
Berth spring units	No-Sag Spring Co., Detroit.
Mattresses	Hewitt Robins, Inc., Stamford, Conn. United States Rubber Co., New York.
Section tables; curtains; berth ladders (UP)	Adams & Westlake Co., Elkhart, Ind.
Display case; tables	Architectural Bronze & Aluminum Corp., Chicago.
Venetian blinds	Ajax-Consolidated Co., Chicago.
Window curtains	Adams & Westlake Co., Elkart, Ind.
Dining chairs; carpet; foam rubber	Beck & Blatchford Co., Chicago.

Plymetl, faced on both sides with aluminum. The passenger-compartment sides of the bulkheads are covered with Kalistron. In the dining cars bulkheads at the end of the dining room are ½-in. Plymetl. The kitchen partition is covered with stainless steel on the kitchen side and furniture steel on the passageway. This partition is ⅞-in. thick and is insulated. An additional 1⅛-in. of insulation, faced with stainless steel, is applied to the kitchen side of the passageway partition behind the range and broiler.

Side and end linings of the baggage car are vertical corrugated aluminum, with stainless steel at the base. At the side door pockets and heater pipe guards the aluminum lining is flat.

Electrical Equipment

The chair cars, sleeping cars, and the dining and kitchen cars have 25-kw. body-hung Genemotors with 40-volt generators and 32-hp., 220-volt 3-phase a.c. motors. The baggage cars for both roads have 4-kw. d.c.
(Continued on page 88)



THE UNDERFRAME of a typical chair car during construction at ACF plant.

HOW THE CARS ARE BUILT

The car bodies are of girder construction with underframes of low-alloy, high-tensile steel assembled by welding, and the superstructure of aluminum alloy, riveted. The center sills are Z-26 sections, welded, of U.S.S. low-alloy, high-tensile steel. Bolsters are cast integral with the buffers and draft sills. The steel Z-section side sills of the underframe are joined to the aluminum-alloy angle side sills of the body side frames by riveting.

Side posts, intermediate end posts, carlines and purlines are extruded aluminum Z-sections, for which several alloys and tempers of aluminum are used, depending upon location in the structure. Roof and side sheathing are 5/32-in. Alclad. Low-alloy, high-tensile steel side posts are used at all jacking points. Center end posts are 8-in. openhearth car-builder's H-beams reinforced with ⅝-in. shear plates.

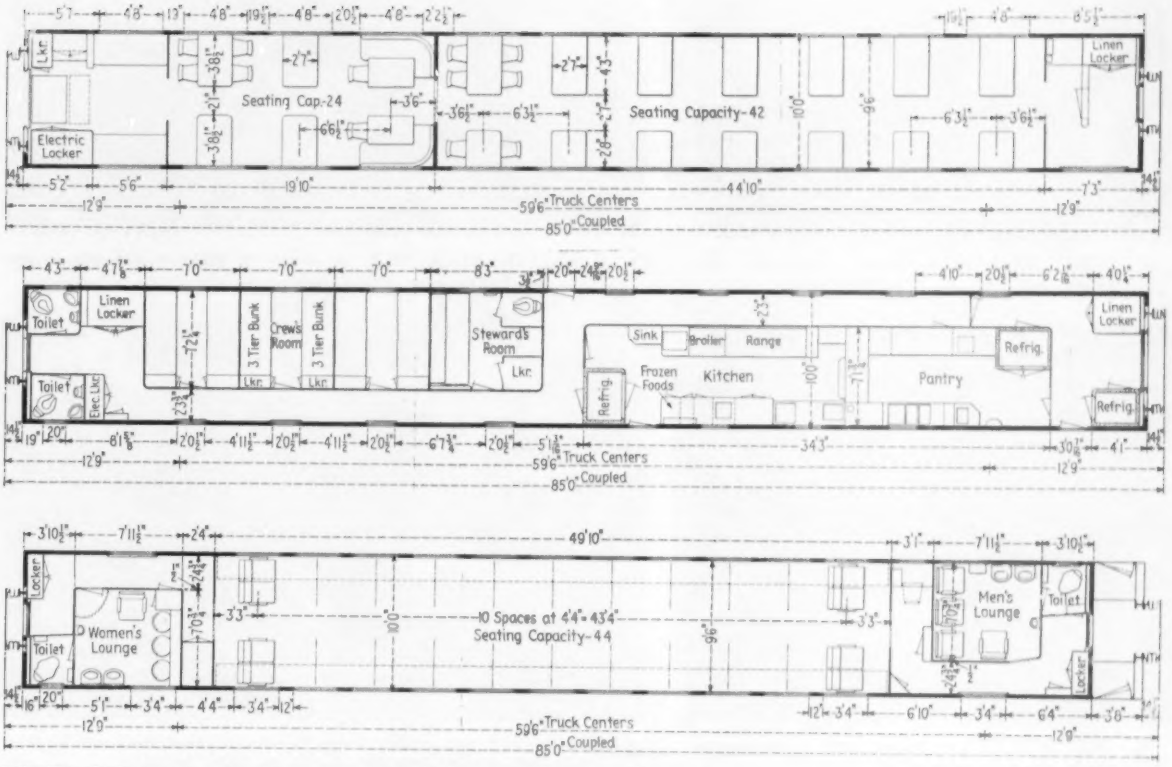
The lower floor is of 16-gage stainless steel over which the Z-section stringers are laid. On these the steel corrugated flooring is laid, separated from the stringers by strips of Presdwood. Both top and bottom corrugations of the floor are filled with cork board, and a top floor of Armstrong cork is laid in cement. The corrugated steel floor is attached to the supports with Huck steel pull-through rivets.

In the kitchen of each kitchen-dormitory car the stainless-steel Keystone floor is riveted to the floor stringers with Huck rivets. Z-section longitudinal and lateral stiffeners of stainless steel are welded to the top of the Keystone, and the space between them is filled with Tucolith. There is a 7-in. center trough in the stainless-steel top floor, from the bottom of which are 2-in. drain openings. Maple floor racks are used in the kitchen and pantry.

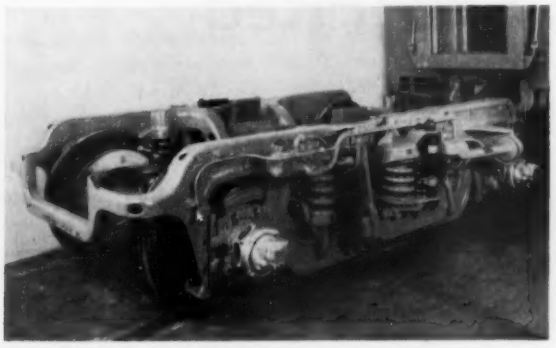
The floors of the baggage cars are laid on 2-in. nailing strips which are bolted to the top of the Z-section stringers. On these is laid the diagonal under floor and the Worthwood end-grain strip block top floor, with heavy asphalt paper between. Fish racks are self-draining stainless-steel pans in which may be set removable sections of wood floor. There are two 15-ft. racks near each end of the baggage cars and two in the postal-mail-storage cars.

Three inches of insulation are applied to sides, ends, roofs and floors of all of the cars. This is Ultralite Fiberglas on the UP chair cars, dining cars, and sleeping cars, and Johns-Manville Stonefelt Type A on the C&NW chair cars and the UP baggage and postal-mail storage cars.

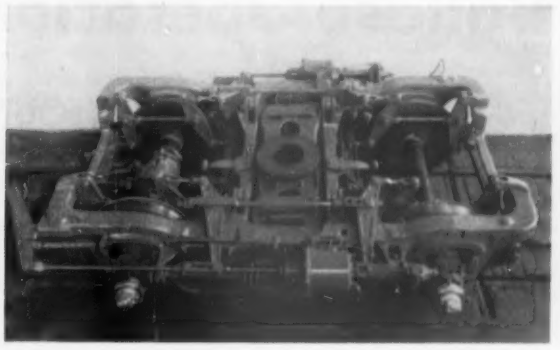
Upholstery	Beck & Blatchford Co., Chicago. Collins & Aikman Corp., New York.
Seats	Heywood-Wakefield Co., Gardner, Mass.
Settee and sofa; vanity chairs	General Fireproofing Co., Youngstown, Ohio.
Portiere curtain	Goodall Fabrics, Inc., New York.
Artwork bulkheads	Denver Gillen, Westport, Conn.
Artwork frieze	H. R. Gilmore, Orangeburg, N.Y.
Kitchen-pantry equipment; steward's desk and locker	Angelo Colona, Philadelphia.
Temperature control (refrigerator)	Carbofrezer Co., San Francisco.
Range, broiler and steam table	Stearnes Co., Chicago.
Mirrorglass	Pittsburgh Plate Glass Co., Pittsburgh. Saftee Glass Co., Philadelphia.
Mirror frames	Hunter Sash Co., Flushing, L.I., N.Y.
Decalcomanias	Meyercord Co., Chicago.
Air conditioning equipment: UP (38 chair cars)	Safety Car Heating & Lighting Co., New Haven, Conn.
UP (dining and kitchen cars)	General Motors Corp., Frigidaire Div., Dayton, Ohio.
C&NW (chair cars)	General Motors Corp., Frigidaire Div., Dayton, Ohio.
Pipe disconnects (air-conditioning)	Paxton-Mitchel Co., Omaha, Neb.
Filter and frame	Air-Maze Corp., Cleveland.
Unifloair grills	Barber-Colman Co., Chicago.
Fresh-air intake	Farr Co., Los Angeles.
Anemostats	Anemostat Corp. of America, New York.
Ceilings panels; trainline receptacles	Pyle-National Co., Chicago.
Heating equipment	Minneapolis-Honeywell Regulator Co., Minneapolis. Vapor Heating Corp., Chicago.
Batteries	Thos. A. Edison, Inc., West Orange, N.J. Electric Storage Battery Co., Philadelphia. Gould-National Batteries, Inc., Trenton, N.J.
Voltmeters, etc.	General Electric Co., Schenectady, N. Y.
Generators	Safety Car Heating & Lighting Co., New Haven, Conn.
Generator drive	Dana Corp., Spicer Manufacturing Div., Toledo.
Electric panels, etc.	Westinghouse Electric Corp., Pittsburgh.
Vibrator converter	Cornell-Dubilier Electric Corp., Indianapolis.
Radio equipment	RCA Victor Div., Radio Corp. of America, Camden, N.J.
Telephone system	Automatic Electric Sales Corp., Chicago.



DINING CAR *(top)* seats 66 persons. The kitchen-dormitory car *(center)* can accommodate up to 20 persons. Note commodious lounges in chair car floor plan *(bottom)*.



UP TRUCK, equipped with outside equalizers.



C&NW TRUCK, equipped with inside equalizers.

Flexible conduit	General Electric Co., Schenectady, N.Y.
Cable	Okonite Co., Chicago.
Cable; loudspeakers	Graybar Electric Co., New York.
Steel cable	Broderick & Bascom Rope Co., St. Louis, Mo.
Light fixtures	Luminator, Inc., Chicago.
Paint	E. I. du Pont de Nemours & Co., Wilmington, Del.
	Lowe Bros. Co., Dayton, Ohio.
	Robert M. Lucas Co., Chicago.
	Patterson-Sargent Co., Cleveland.
	Pittsburgh Plate Glass Co., Pittsburgh.
Train line	American Phenolic Corp., Chicago.
Valves and fittings	Imperial Brass Mfg. Co., Chicago.
Seamless steel tubing	A. B. Murray Co., Elizabeth, N. J.
Brass pipe	Metal Goods Corp., St. Louis.
Pipe fittings	Mueller Brass Co., Port Huron, Mich.
Pipe fittings and pipe	Grinnell Co., Providence, R.I.
Pipe insulation	Johns-Manville, New York.
	Union Asbestos & Rubber Co., Chicago.
Pipe covering	Philip Carey Manufacturing Co., Cincinnati.
	Gustin-Bacon Manufacturing Co., Kansas City.
	Union Asbestos & Rubber Co., Chicago.
Rubber channel	Raybestos-Manhattan, Inc., Manhattan Rubber Div., Passaic, N.J.
Valves	Walworth Co., New York.
Fire extinguishers:	
UP	American Foam Equipment Co.
	General Detroit Corp., Detroit.
C&NW	Pyrene Manufacturing Co., Newark, N.J.
Drinking-cup dispenser	Dixie Cup Co., Easton, Pa.
Water coolers:	
UP (chair cars and sleepers)	Chase Supply Co.
C&NW (chair cars)	Sunroc Co., Glen Riddle, Pa.
UP and C&NW (baggage cars)	Henry Giessel & Co., Chicago.
Copper tubing and pipe fittings	Chase Brass & Copper Co., Waterbury, Conn.
Lavatories; pipe and fittings	Crane Co., Chicago.
Hoppers	Duner Co., Chicago.
Paper holders; towel dispensers	Scott Paper Co., Chester, Pa.
Scotchlite	Minnesota Mining & Mfg. Co., St. Paul.
Numbering device and signs	Electric Service Manufacturing Co., Philadelphia.
Defect card holder	Western Railway Equipment Co., St. Louis.

1 DIRTY BALLAST is removed by Cribex machines working in two batteries.

2 BALLASTEX-SCREENEX combinations pick up the old ballast from the sides, clean and return it to the track.

5 OLD SPIKES are tossed into a dump-type push car and dumped in piles.

6 CROSSTIES are pulled from the track, new ones set in position, then pulled into the track, by three Gandys.

Ballast Operations Expedited

. . . WITH LARGE ARRAY OF EQUIPMENT

N&W equips an 80-man gang to obtain a high degree of mechanization when cleaning ballast, raising track and renewing ties

Starting early in January, the Norfolk & Western organized an 80-man gang for carrying out its out-of-face program of cleaning ballast, raising track and renewing ties. For expediting this work the road equipped the gang with numerous machines for mechanizing the operations of loosening the ballast at the ends of the cribs; picking up and cleaning the ballast from the cribs, shoulders and intertrack space and returning it to the track; raising and tamping the track; removing the old ties and inserting new ones; driving the spikes; and piling the old ties. The road also experimented with a new machine, a Trakliner, for lining the track.

The newly organized gang began work at the easterly end of the road's double-track line near Suffolk, Va. Actually it is a combination of two gangs employed during 1953, one being a 30-man gang and the other a 50-man gang. One of the reasons for combining the two gangs is to minimize train delays while traffic moving in both directions is handled on one main track, thereby giving the track forces sole occupancy of the track on which the gang is working. A supervisor is assigned to each of the points of train diversion for expediting train movements over crossovers on each side of the gang. Another reason for combining the gangs is to obtain full utilization of the track machines.

The equipment furnished to this gang includes 12 Cribex machines, 2 Ballastex-Screenex machine combinations, 3 Burro cranes, 2 air compressors with pneumatic tamping and spike-driving tools, a Power Jack, a dump-type push car, 3 Gandy tie-removal and inserting machines, 3 Multiple Tampers, and a spike puller, plus several motor cars, trailers and push cars.

The local section crew, equipped with a 210-cu. ft.-per-min. air compressor and tamping tools fitted with ballast forks, works in advance of the main gang. These men loosen the hard-packed ballast at the ends of the tie cribs to make it easier for the operators of the following Cribex machines to insert the digger booms.

The two leading units of the main gang are organized for cleaning the ballast. The first unit includes seven

3 **FRESH BALLAST** is unloaded by a work train which previously had unloaded crossties ahead of the gang.

4 **TRACK RAISE** is made with a Power Jack spotted at joints and centers of rails.

7 **EXTRA TIES** are carried on a push car ahead of the last Gandy in case additional ones might be needed.

8 **AHEAD OF TAMPING**, ties are spaced, plates applied, ballast distributed and smoothed.

Cribex machines, a Ballastex-Screenex combination machine, and a Burro crane, and the second unit includes the same machines except that it has five instead of seven Cribex machines. The first unit cleans the cribs on the field side of the double-track main and the second unit cleans the cribs on the intertrack side.

The reason for having seven Cribex machines in the first unit and only five in the second is to create a proper balance between the crib-cleaning work and the ballast cleaning. The Ballastex-Screenex combination of the second unit works slower than that in the first because it has more ballast to handle in the intertrack area and also because it takes more time to clear the machine for trains passing on the other main. When the first unit gets too far ahead of the second, it is turned to work on the intertrack side, thus keeping the work as a whole in balance. When working the Cribex machines, those in the first unit each clean the cribs in every seventh rail and those in the second each clean the cribs in every fifth rail.

The Burro cranes, positioned between the battery of Cribex machines and the Ballastex-Screenex combination, serve as towing units for all the machines in their respective units, and also tow push cars containing gasoline and oil supplies, as well as a trailer for transporting men.

A work train follows behind the cleaning unit when necessary for unloading stone ballast. It is also used for unloading crossties ahead of the gang. When not unloading ballast or crossties, the men assigned to the work train are employed in dressing ballast at the rear of the gang.

The track is raised about two inches by means of a Power Jack, which is spotted at the joints and centers of the rails. The ballast is removed from the tie plates on those ties which are to be renewed, the spikes withdrawn, and the tie plates removed. The old spikes are tossed into the tray of a dump-body push car and, when a full load is accumulated, they are dumped in piles on one side of the track.

The bad ties are then removed. This is accomplished by means of three Gandy machines. The leading Gandy pulls the old tie from the track, and two men following behind quickly shovel the loose ballast away from the end of the exposed tie bed to permit easy entry of a new tie. The second Gandy then picks up one of the new ties, which is turned so as to have the score mark on the "line" side, inserts one end under the rail, and sets it down at right angles to the track. The third machine then pulls the new tie into the tie bed. A small supply of extra ties is carried on a push car ahead of the third machine for use in the event that an insufficient number has been unloaded by the work train.

The three Gandys are followed by a group of trackmen who space the ties, apply tie plates to the new ties, check and correct any irregularities in the track surface between the Power Jack raising points, and place the ballast uniformly on the track for the tamping operation.

Three Tamping Machines

These trackmen are followed by three closely spaced Multiple Tampers, each working on every third tie. The operators of these machines do not work to any pre-

9 TRACK IS TAMPED by three closely spaced Multiple Tampers.

10 SPIKES ARE DRIVEN with air hammers, powered by an I-R track-mounted compressor.

11 TRACK IS LINED by Nordberg's Trakliner, manned by an operator and a laborer.

12 OLD TIES are picked up and piled alongside the track by a Burro crane equipped with a clamshell bucket.

scribed number of tool insertions but make several insertions until they can tell by the "feel" of the machine that adequate compaction has been achieved.

Behind the tampers is a small group of men comprising a spiking unit. They reapply any rail anchors removed during tie-spacing operations, straighten any misalined tie plates, and line the new ties up on the line side. They are accompanied by a motor car towing a spike puller and a push car loaded with new spikes, which are distributed on each side of every new tie.

Occasionally, where incorrect track gage is found, the spike-pulling machine is used for pulling the necessary number of spikes and then the track is respiked to proper gage. At the rear of this unit is another 210-cu. ft.-per-min. track-mounted air compressor which is used for powering the spike-hammers of two men engaged in driving the spikes in the new ties.

New Track-Lining Machine

The next unit in this organization would normally be a lining gang of 12 men and a foreman, but on this occasion the road was lining track with the new Trakliner machine, which is a self-propelled unit manned by an operator and one laborer working under the direction of a foreman.

The Trakliner is powered by a 12-hp. two-cylinder, air-cooled gasoline engine. The traveling drive is mechanical and the lining is accomplished through hydraulic rams. Each of the four wheels is made so that the flanges can be moved away from the treads, thus exposing the gage side of the rail and about 1 in. of the rail-head surface. Each wheel also is equipped with a quick-connecting outside flange so that, when operating, only the treads on the line rail are used and the wheels on the opposite side are then double-flanged for keeping the machine on the track.

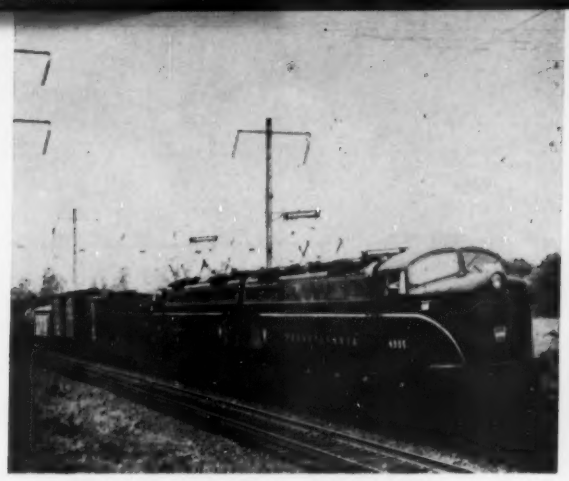
The foreman, by hand signals, has the operator move the machine to the point where lining is to be done. Rail clamps at each end of the Trakliner are then lowered and these clamp the machine to the track by gripping the undersides of the rail heads, and do not interfere with the sighting. The laborer then positions two lining shoes to fit the crib spacing, after which the operator lowers the two shoes onto the cribs by means of a lever controlling hydraulic rams. Thrust bars in the shoes are then actuated which move the track either to the right or left, and exert a force of 5,000 lb. each against the base of the rail.

Finishing the Work

Following behind the lining operation is a Burro crane equipped with a clamshell bucket which is used to pick up and pile the old ties on the embankment at proper clearance for trains to pass. Generally, however, this work is done by two men equipped with hand tongs.

The last unit of this gang is a dressing gang engaged in smoothing the ballast in the cribs and on the shoulders. Upon completion of this operation, the track is left to settle under traffic, after which the section forces correct any irregularities in line and surface that may have developed.

The work is scheduled to progress at the rate of four miles a week. Although the work had been retarded about one mile of the expected progress at the time this gang was visited, the road is pleased with the performance of the combined gang organization and believes that, with more favorable weather, the scheduled progress will be made.



RECTIFIER locomotive performance records afford electrification an added attraction.

Rectifier Interference Cut

ON TELEPHONE LINES

Rectifier-type electric locomotives have now been developed to the point where interference with communication lines can be made less than is possible for locomotives equipped with a.c. series motors

Eliminating or reducing inductive disturbances caused in communication circuits by power lines is normally referred to by engineers as inductive coordination. E. B. King of the American Telephone & Telegraph Co., K. H. Gordon of the Pennsylvania, and L. J. Hibbard of Westinghouse Electric Corporation recently combined forces to produce a report on "Rectifier Motive Power—Inductive Coordination Considerations," which was presented at the Winter General Meeting of the American Institute of Electrical Engineers in New York, January 18 to 22.

The authors offered the following observations:

For many years, the use of rectifier motive power was considered impracticable for several reasons, one of which was the telephone interference problem.

Corrective measures formerly considered necessary to minimize power-supply wave distortion of the single-phase rectifier to a degree which would be satisfactory so far as telephone communication was concerned rendered this type of motive power unacceptable to locomotive builders and to railroads.

Advances in the rectifier and communication arts, however, have tended to reduce substantially some of the deterrents to the use of rectifiers for motive power. From the rectifier standpoint, the development of successful large capacity sealed-type rectifiers and the consequent elimination of the vacuum pump difficulties were important advances.

From the communication standpoint, the extensive replacement by railroad and telephone companies of open wire with cable, with its inherent shielding and close pair spacing, as well as the increasing use of carrier, have made the communication plant less susceptible to interference. Another factor has been the general policy of telephone companies for many years to avoid long and close inductive exposures to existing or potential railroad electrifications.

As a result there are many factors to favor the present application of rectifier locomotives to existing railroad electrifications. These factors might not be present to the same extent along lighter trackage routes which have not heretofore been envisioned as suitable for electrification. With proper design and coordination, however, no

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COMPARATIVE PERFORMANCE — RECTIFIER-TYPE LOCOMOTIVES VS. DIESELS

Rectifier-type locomotives and cars on the Pennsylvania have turned in a highly successful performance record, and experience has proved that any telephone interference which may be caused by such motive power is easily corrected. Data on performance were disclosed in a paper by F. D. Brown of Westinghouse Electric Corporation, presented at the Winter General Meeting of the American Institute of Electrical Engineers in New York January 18 to 22.

Rectifier-type electric locomotives, rated 6,000 hp. and having 740,900 lb. on drivers, and diesels of similar rating are compared in Mr. Brown's paper to show specific advantages of the electrics. On the Pennsylvania's 22-mile Smithville grade, a rectifier locomotive will outperform a diesel because of its short-time overload capacity.

Per 100 tons on drivers, each type of locomotive may handle on this grade a maximum of 3,400 tons with a running factor of 16 2/3 per cent adhesion. With maximum tonnage, the diesel speed is 12.5 m.p.h. against 22.5 m.p.h. for the electric. This represents a time saving of 55 minutes over the grade.

If the diesel operating speed were raised to 22.5 m.p.h., its tonnage would have to be reduced to 53 per cent of that hauled by the electric. At 30 m.p.h. which is the present operating speed over the grade, the diesel tonnage is 47 per cent of the electric's. Approximately 200 tons of diesel locomotive are required per 100 tons of electric locomotive to maintain the present schedule.

It is Mr. Brown's conclusion that rectifier locomotives have demonstrated fundamental characteristics so desirable in railroad motive power that they will be specified as the desired standard for any future replacements of straight electric locomotives.

Some pertinent factors comparing straight a.c. electric locomotives with rectifier-type electric locomotives were tabulated by him as follows:

	A.C.	Rectifier
Locomotive efficiency at nominal continuous horsepower (per cent)	74.1	82.5
Locomotive efficiency at maximum continuous tractive force (per cent)	60.0	79.0
Locomotive power factor at nominal continuous horsepower (per cent)	82.9	82.0
Locomotive power factor at maximum continuous tractive force (per cent)	63.4	82.0

difficulty from telephone interference would be expected.

Results with rectifier motive power on the Pennsylvania were set forth in the report as follows:

An experimental rectifier-type multiple-unit car has been in continuous service with originally applied apparatus since July 14, 1949. Except for test purposes, no corrective apparatus has been connected on this equipment. The car, which is said to have excellent power factor and efficiency, draws 52 amp. from the overhead 11-kv. catenary during acceleration. No added or different noise in adjacent communication circuits has been attributed to operation of this first rectifier-type motive power unit.

Tests show that the influence of the rectifier car, without filters, was of somewhat lower magnitude than that resulting from a straight a.c. electric motor car.

The maximum interference measured in so-called I-T products for various types of motive power equipment are tabulated. (I-T represents the current in amperes supplied to the car, times the telephone influence factor which has a different weighting for each frequency in the voice range, based upon telephone receiver response.)

Rectifier car without filter	1,500
Rectifier car with best filter	300
A.C. motor car without filter	2,000
A.C. motor car with best filter	900
P5a freight locomotive (a. c. motors)	1,400
GG1 passenger locomotive (a. c. motors)	2,250

Two 6,000-hp. rectifier-type locomotives have operated on the Pennsylvania without corrective apparatus connected except for test purposes. Locomotive 4995-4996 entered revenue service in November 1951; Locomotive 4997-4998 in February 1952. These two-unit locomotives normally draw 750 to 800 amp. from the 11-kv. overhead wires, with occasional short-time peaks of 1,000 amp.

Tests were made on Locomotive 4995-4996 during the summer and fall of 1951 on main-line tracks between West Yard and Davis, south of Wilmington, Del. On these tests, one unit hauled the dynamic braking load of the other unit. Railroad telephone personnel, listening on adjacent telephone circuits during these tests, could detect no added noise directly chargeable to rectifier motive power. Similar results were obtained when Locomotive 4997-4998 was tested between West Yard and Davis.

After Locomotive 4995-4996 entered revenue service, further listening tests on railroad telephone circuits made by different operating personnel were reported to have detected no added noise for several weeks. However, when using loud speakers on some of these railroad circuits, power directors at Harrisburg, Pa., noticed a distinctive noise when a rectifier locomotive was operating in certain portions of their territory.

Means of eliminating this noise—described as a buzz—have since been developed.

The authors conclude that rectifier motive power does not involve a noise problem which cannot be successfully and satisfactorily coordinated.

They add that it has been demonstrated by tests in the laboratory, and on the railroad, that a non-filtered, high-capacity, single-phase rectifier locomotive will produce noise in exposed communication circuits, but that this noise can be diminished to satisfactory values by comparatively small and simple filters on the locomotive.

Benchmarks and Yardsticks

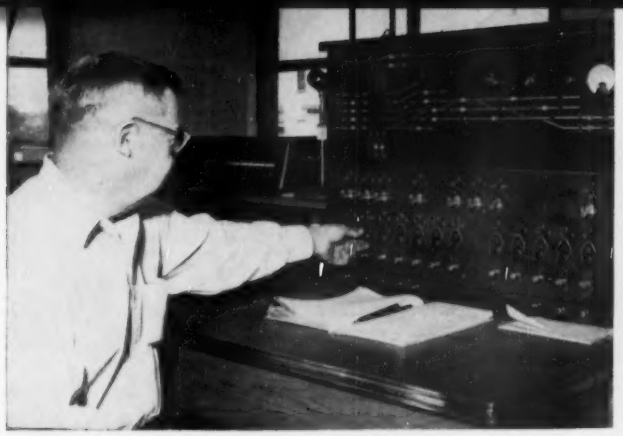
"SHOULD THE MAN SEEK THE JOB, or the job seek the man?" This is a practical question that almost everybody has to answer for himself at least once in his lifetime—perhaps more often. And it is quite certain that no one answer can be given which will be valid under all circumstances. For instance, there is no doubt whatever that many men have "gone out after" a particular job, have succeeded in getting it, and have given a meritorious performance.

There is, also, no doubt that there have been other ambitious men who have developed more skill in the chase than in the carry-through; and whose attitude has seemed to be, once they have arrived: "What's the use of running for a streetcar when you've already caught it?" The trouble with this approach is that, when too much of a fellow's skill has been directed toward attainment, it sometimes happens that his ability to deliver isn't quite good enough.

All in all—and granting that there are numerous exceptions—isn't the man who makes the job come looking for him (if he has that ability) usually in a much more favorable position? Such a man calls attention to himself, not directly, but by noteworthy performance in his existing job. Not having elbowed any of his colleagues out of the way, he is not likely to have many enemies but, on the contrary, is pretty sure to have admiring friends who will aid him wherever they can. Since he did not ask for the job in question, he can frankly admit his limitations and can put himself in a position where his superiors will not be expecting him to pull rabbits out of a hat—as he might have to do if he had made a more direct approach.

If one looks for the advice of sages on this question, he will find whatever answers he prefers. Some of the wise ones will tell him to set his goal early and go after it relentlessly until it is attained. Others just as sagacious will remind him that performance, and getting credit for performance, are conflicting goals; and that the man who chooses one of them automatically cancels out any hope for success with the other. So the answer is turned right back to the inquirer.

The fellows that most need to give this question some serious thought are those who "have a lot on the ball"—so much so that any worry about their future success is entirely misplaced; but who, nevertheless, get impatient and engage in direct "selling" where none is needed. Such sales efforts can "backfire," leading some overly suspicious people to doubt that a man has abilities when he finds it necessary to merchandise them directly. Sales effort which runs the risk of backfire is usually worse than none at all, especially when the subject really has what it takes. **J.G.L.**

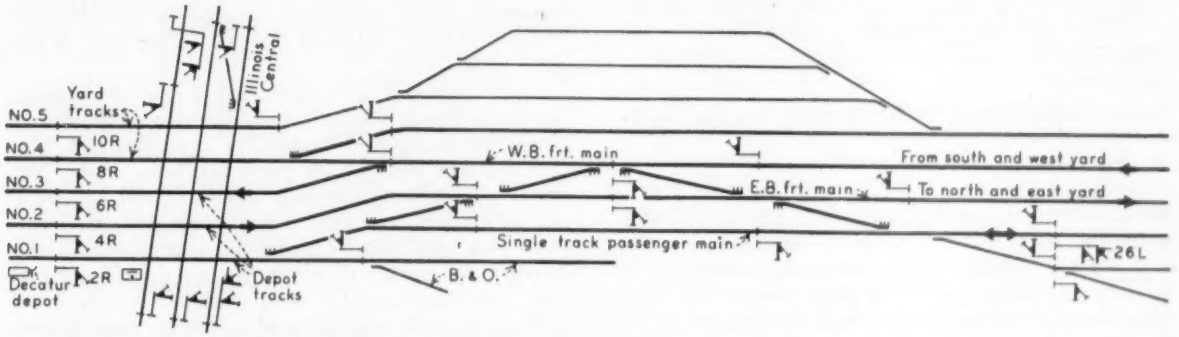


OPERATOR controls the interlocking at the west end of the yard.

YELLOW-under-lunar aspect saves train time.

How Wabash Speeds Yard Moves

WITH INTERLOCKINGS AND COMMUNICATIONS



TRACK AND SIGNAL PLAN of Wabie interlocking at the west end of the yard.

Moves into and out of both ends of two-mile yard are controlled by new interlockings—Communications include several intercom systems, paging loudspeakers, talk-backs, and remote control voice recording and transcribing machines to "grab" car numbers

At Decatur, Ill., the Wabash has enlarged and entirely rebuilt an extensive freight yard. The work includes two modern interlockings, new signaling, and several up-to-date communications systems, which save the time of trains entering and leaving the yard, and also expedite switching operations in the yard.

Decatur is the hub of the Wabash, with main lines radiating in four directions—113 miles southwest to St. Louis; 304 miles west to Kansas City; 173 miles northeast to Chicago and 375 miles east to Detroit, the latter line continuing 226 miles further to Buffalo. From the line to Kansas City secondary main lines branch off northwest to Des Moines and Omaha. Thus from the standpoint of freight traffic, Decatur is the crossroads.

With 70,000 inhabitants, Decatur is the center of a rich agricultural territory, with numerous industries, especially mills for processing corn and soy beans. Thus, a large number of cars are delivered and picked up at local industrial spurs in Decatur. In addition, the Wabash interchanges traffic at Decatur with the Illinois Central, the Pennsylvania, the Baltimore & Ohio and the Illinois Terminal. The Decatur yards receive 2,000 cars daily, and the same number are dispatched. Of these totals, about 200 cars are local, while the remainder are in through movement.

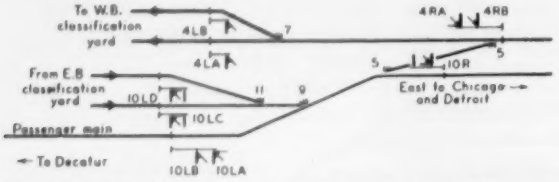
Why a Flat Yard?

Trains arriving in Decatur are made up of "blocks" of cars. In a train from Detroit, perhaps the first 30 cars are for St. Louis, the next 40 for Kansas City, and the remainder for Decatur and connections. Similarly, a train arriving from St. Louis may have 50 cars on the head end for Chicago, then 30 cars for Detroit. When making up a train for departure to Chicago, for example, the cars in the trains from Kansas City and St. Louis are set over on a given track, and then the train for Detroit is made up of the other blocks of cars.

In short, the switching operations are primarily with

YARDMASTER contacts 9 paging speakers and 55 talk-back speakers in the west half of the yard.

ONE OF THESE talk-back speakers works with the east tower and the other with the yard clerk.



TRACK AND SIGNAL PLAN of Brush interlocking at east end of yard.

blocks of cars, rather than with single cars or cuts with a few cars each. For this reason, after thorough study, the Wabash decided that a flat yard, rather than a hump yard, would best fill its requirements. The yard area, about 1½ miles long, extends east and west, the west end being near 22nd street, which is about 1 mile east of the passenger station.

In the former, more compact track arrangement, a double-track main line passed through the center of the layout, with an eastbound yard on the south side and a westbound yard on the north side. This arrangement was a handicap, because transfer moves between the two yards were delayed when waiting for passenger trains. This double track line was used primarily only by the passenger trains, of which there were 12 daily.

As a part of the project of enlarging and building the new yards, a single-track passenger main was located around the south side of the entire layout. This passenger main extends as an independent track for the entire 2½ miles between the interlockings at the two ends of the yard area, and train movements on this passenger track are authorized by signal indication.

Previously, no interlockings were in service at either end of the yard, and arriving and departing trains encountered serious delays. At the west end of the yard, the Illinois Central crosses the Wabash, the Wabash passenger station being just west of this crossing. Passenger train stops delayed freight trains, and all trains lost time making the protection stop for the IC crossing.

As a part of the yard project, an electric interlocking, known as Wabic, was installed to include not only the Wabash-Illinois Central crossing, but also three single switches and three crossovers on the Wabash and one IC crossover. New signaling was arranged so freights could be run around passenger trains at the station. North from this interlocking, tracks extend to the yard and to the new single passenger main track around the yard. Now the freights are not delayed because of passenger trains, and track capacity is available for freights to enter and leave this end of the yard at the same time.

At the east end of the new yard, a new interlocking, known as Brush, was built to include three connections from the double-track main line from the east, viz. (1) the new single track passenger main around the yard; (2) leads into the eastward yard; and (3) leads out of the westward yard to the double-track main line east. This interlocking includes five single switches and seven home signals, of which five are dwarfs and two are high signals. The control machine for this interlocking is in the operator's office on the ground floor of the Brush yard office, about 1,600 ft. west of the interlocking layout. In addition to controlling the interlocking itself, this Brush machine also controls signals for authorizing train movements in either direction on the new single-track passenger main around the south side of the yard.

In the Brush interlocking, the Wabash uses new signal aspects that save train time. Referring to Fig. 2, the eastward home signals 10LC and 10LD are dwarfs that govern eastbound trains pulling out of the yard on the leads to the eastbound main track. If the switches are lined up, and signal 10LC is cleared, with two or more blocks unoccupied, the aspect will be green under lunar. If the first block is unoccupied, but the second is occupied by a train of the same direction, the dwarf signal 10LC displays yellow under lunar. This aspect tells the engineer that the route is lined up for him to go out on the main track, and that the first block is unoccupied, so that as soon as the length of his train has passed over the turnout, he can increase to medium speed, prepared to stop short of the next signal.

If the lunar white were not provided on this signal, a single green aspect would limit the speed not to exceed 20 m.p.h. all the way to the next automatic signal; a single yellow aspect would require restricted speed, not to exceed 15 m.p.h., all the way to next automatic signal. Either would needlessly delay the train, under the circumstances prevailing. But the addition of the lunar on the dwarf steps up the permissible speed so that, in this respect, it is the same as a high signal after the train passes through the turnout. The lunar

CAR NUMBERS are recorded on this Voice-Writer which is installed in the yard office.

is normally dark, being lighted only in the instances mentioned.

In the new layout, the receiving yards (five tracks for eastbound and five for westbound trains) are situated side-by-side down the center of the yard area. The westbound classification yard, with 15 tracks, lies to the north of the westward receiving tracks, and the eastbound classification yard, with 15 tracks, lies to the south of the eastbound receiving tracks. Trains are made up on the longer classification tracks, and depart directly from these tracks.

Communications Arrangements

The main yard office, known as East Decatur, is at the west end of the classification yards, and the Brush yard office is at the extreme east end of the yards. At East Decatur, the yardmaster's office is on the top floor of a 50-ft. tower which is part of the East Decatur yard office building. On his desk is a communications control console, with an enclosed loudspeaker and a separately mounted microphone. He can set up connections to paging speakers at 9 locations in his area. He can also make calls to or receive calls from 55 talk-back speaker locations in his area.

At the Brush yard office there is a 45-ft. tower, the top floor of which is the office of the yardmaster who has charge of operations at the east end of the yard area. On his desk is a communications control consol, with an enclosed loudspeaker and a separately mounted microphone. He can connect with 10 paging speaker locations and 54 talk-back speaker locations in his area.

At some locations, such as the ice docks, operations and men employed may need to communicate not only with the yardmaster at the Brush tower office but also with the yard clerks at Brush. At such points as the ice dock, there are two pairs of talk-backs, on a mast with two uprights. One pair is connected to the consol at the Brush yardmaster's office, and the other pair is connected to the yard clerk's console at Brush yard office.

With the old arrangement at Decatur, the yardmaster spent most of his time walking from one part of the yard to another, in order to maintain contact with switching crews, car repairmen and other forces. He had difficulty in keeping up with changing conditions, and, in too many instances, he was busy correcting troubles, rather than being prepared to foresee difficulties and eliminate them before they caused delays.

Now, the yardmasters stay in their elevated offices, and, by means of conversations back and forth between them, and between them and various men working throughout the yard, every operation is closely supervised, so that delays are minimized. For example, the yardmaster can keep in touch with each yard crew in his territory, to receive information on the progress of work under way, and to issue new instructions based on changing conditions. Or, he may tell a crew to clear a lead so that an approaching train can pull in.

If a minor defect is found on a car, this information is given by talk-back speaker to the yardmaster at once, and he, in turn, calls the car men. Thus, in numerous instances, repairs are made quickly, and the car leaves on schedule, whereas, with previous practices, delays of several hours might have occurred.

Information on reconsignments is handled quickly, avoiding delays previously incurred sometimes to get a car out of a train after it was ready to depart. When a westbound train is approaching the east end of the receiving yard, the yardmaster, using the microphone in his office, employs the paging speaker near the locomotive to announce the number of the track in the receiving yard on which the train is to pull in.

Because the yardmasters have contact with both the front and rear ends of trains entering or leaving the yard, they can by using the loudspeakers relay information from the rear to the front or vice versa, thus obviating delays, especially in adverse weather when hand signals cannot be seen easily. The paging and talk-back speakers, as well as the control consoles and amplifer equipment on this project, were furnished in packaged form by the R. W. Neill Company.

Car Number Recording

Time is saved at Decatur by new equipment to "grab" car numbers for voice recordings. As an incoming train approaches, a yard clerk either picks up a telephone hand set, at a window of the yard office, or goes directly across the tracks to a telephone booth. On this telephone is an indicating light which will show red as an indication that a recording is being made of numbers read into the telephone. If there is no disc in the machine, or the a.c. power is off, no light will appear. As a train is departing, a similar operation is followed to "grab" and record car numbers. This system of recording car numbers is in operation for trains arriving or departing at both ends of the yard.

This system has been helpful in locating "no bill" cars, and also saves the outside yard clerk from actually walking over the train to make these checks. Soon after a recording is made, the record is placed in a transcriber equipped with a speaker or ear phones, and played back, to check and correspond with the train consist, also for checking waybills. Advance consists are made from this list and Teletyped ahead to the next station.

The interlockings, signaling and communication systems in this new yard were planned and constructed by Wabash forces, under the jurisdiction of G. A. Rodger, superintendent of signals and communications. P. Brady, supervisor communications, had supervision of the communications construction.

BETTER FACILITIES FOR BETTER SERVICE is a cardinal point in REA's program. This new Philadelphia terminal, dedicated February 25, accommodates 30 cars and 100 trucks.

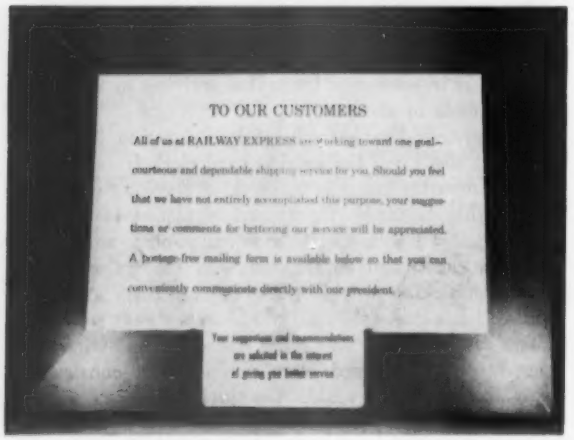
REA in "Sound State"

. . . AS NEW CONTRACT BEGINS

Many operating and organizational changes designed to win greater "shipper acceptance" and to meet competition, particularly from parcel post

On March 1, the Railway Express Agency began operations under its second long-term contract with its railroad owners.

Except for a few relatively minor differences, summarized on page 73, the new contract is substantially the same as the one it replaces. But, in the opinion of its own officers, the agency's outlook for the early years of its new contract is far brighter than was the case during the closing years of the old. This "sound and reinforced state," as REA President A. L. Hammell has described it, is a result both of internal factors—the agency's own efforts to improve its service and lower its costs—and of external factors—which have somewhat reduced the competition the agency has been meeting from the government's deficit-ridden parcel post system.



SHIPPER SUGGESTIONS are invited—and are being received, acknowledged, and acted on.

Better Service at Lower Cost

REA's own internal improvement program—a continuing, long-term effort—began with a traffic and cost survey of its terminal and vehicle operations by an outside firm of industrial engineers. These outside experts, in addition, trained 20 agency employees as materials handling engineers, qualified to continue and expand the survey. A "work measurement plan," designed to determine accurately the number of pieces or the amount of business handled per employee-hour, has permitted development of "manning tables," to coordinate the number of employees on duty in any given terminal at any given time with the probable flow of traffic.

To implement these studies, the agency itself has spent some $2.5 million—and is still spending—for modern materials handling equipment—fork-lift trucks, conveyors of various types, etc. The result has been faster and more economical handling of express at, in, and

HERE ARE SOME DIFFERENCES . . .

THE NEW CONTRACT . . .	THE OLD CONTRACT . . .
Runs for 19 years, 10 months—March 1, 1954, to December 31, 1973.	**Ran for 25 years—March 1, 1929, to February 28, 1954.**
Permits a participating railroad to withdraw on 18 months' notice on the first day of any month after December 31, 1958.	**Had no "escape" clause; a railroad could not withdraw until the end of the contract's 25-year term.**
Gives REA a freer hand in routing traffic, by making "overall efficiency" a factor to be considered in dividing express traffic among competing railroads.	
Brings up to date the "base period" for express revenue distribution, by providing a test period of at least 12 months, during which revenue will be divided among railroads on the basis of actual routings as shown on waybills.	**Last "base year" for distribution of express revenues among railroads was in late 1930's.**
Obligates REA itself to furnish express shippers with refrigerator or other special-type cars.	**Required railroads to furnish cars for express traffic without limitation as to type.**
Allows territorial groups of railroads (or Class II and III roads within a territory) to require REA to petition regulatory authorities for addition of territorial surcharges to basic express rates.	

through the agency's own terminals—an important factor, Mr. Hammell points out, since a gain of an hour or two at point of origin may mean a 24-hour gain at destination.

These terminal studies, and especially the installation of additional mechanized materials handling equipment, also have been a big aid in the agency's constant campaign to create incentives for its employees to handle all shipments carefully. By the combination of these factors, damage claims were reduced from 4.31 per thousand shipments in 1951 to 3.87 per thousand in 1952, with a still lower ratio indicated for 1953.

As a further move to improve its operations, the agency, for the past year, has had in the field 60 territorial "supervisors of service." Their instructions are simple—"Find out what's wrong, and fix it." As Mr. Hammell puts it, "They have no responsibility except to see that REA gives good dependable service. And they have to hit a stone wall before they write a report."

Shipper Suggestion Campaign

The agency also has gone directly to its employees, and to its shippers, with requests for suggestions as to how service can be bettered or costs reduced. Employee suggestions—for some of which there is a monetary reward—have almost doubled in number in the past two years. And a shipper suggestion campaign, initiated about 15 months ago, has produced to date some 3,000 replies on postage-prepaid forms supplied by the agency itself. These forms are addressed directly to President Hammell. All are acknowledged and every one which involves a service complaint or a suggestion for improvement is carefully investigated with a view to adopting the suggestion or curing the complaint, if possible. Typical of such replies was one to the effect that the free pick-up zone in a certain New Jersey suburb of New York be extended by a few blocks, to provide direct service to an industry which has since become a substantial shipper. Investigation developed a justified need for this additional service, which was promptly arranged.

The agency's program, however, is not confined to its actual operating facilities; it has, likewise, "streamlined" its executive organization, with the objective of creating a "well coordinated top management team." Toward this end, there have been created regional operating vice-presidencies at New York, Chicago, Atlanta and San Francisco, reporting directly to an overall operating vice-president at New York, who in turn reports to Mr. Hammell. Under this operating department is a transportation department, with the specific responsibility of working out schedules and routings.

The traffic department has likewise been reorganized, with directors of business planning, public relations, market and traffic research, rates and tariffs, sales, and advertising and promotion. The personnel department, too, has been overhauled, with specialized directors of training, wage stabilization, labor relations, labor research, and personnel relations reporting to a personnel vice-president. An administration and finance department with overall responsibility for accounting and fiscal matters has been established. This includes the establishment of the position of controller, with definite responsibility for developing cost control techniques.

Operating as it does, however, in intense competition

MATERIALS HANDLING EQUIPMENT—and its effective use—is receiving special attention.

"As the agency starts its new contract with the rail carriers, it will be in a sound and reinforced state. There are many factors now present which will enable us to further improve our service to customers and at the same time foresee reductions in the deficits incurred by the railroads in providing the underlying intercity transportation service.

"Realined and augmented executive skills, continuing heavy investments in modern materials handling equipment, a trained corps of service supervisors and many other programs designed to strengthen operating, personnel and sales activities keynote the new vigor with which REA faces the future."—*From a 1954 "business outlook" statement by Alfred L. Hammell, president, Railway Express Agency.*

with truck freight, freight forwarders and parcel post, there is necessarily a limit to what the agency can accomplish by its own efforts. External factors, over which the REA itself can exercise no direct control, largely determine the amount of business it can expect to handle.

Most serious of these external factors is competition from parcel post. This service, REA President Hammell points out, was created in 1913 to carry small packages, with a weight of not over 11 pounds, and a combined length and girth of not over 72 inches. It was not intended to compete with any other form of transportation —and it was intended to be self-supporting. Gradually, however, the weight limit was raised by administrative—not congressional—action to 70 pounds, and length and girth limits to 100 inches. Over the same period, parcel post became a money-losing proposition, running up huge annual deficts to be made up out of general taxation. These deficits—by the government's own figures, which do not include all assignable costs—totaled $356 million between 1926 and 1946; $519 million in 1946-1951, and $131 million in the 1952 fiscal year alone.

Post Office Department cost studies have shown that the cost of handling every package exceeded the revenue at rates in effect prior to October 1, 1953. The figures further indicated that the loss increased as the weight and distance increased, so that on a 70-lb. parcel to the eighth zone there was a loss of $2.71.

Effective January 1, 1952, however, by Public Law 199, 82nd Congress, the weight limit on parcel post shipments between first-class post offices only, was reduced to 40 lb. for zone 1 and 2 (150-mile) movements, and to 20 lb. for longer distances; size limits were simultaneously cut to the original 72 inches. These reduced limits do not apply to books or agricultural products, nor to shipments to or from other than first-class post offices.

So far as can be determined from available figures, REA officers say, the reductions have kept the parcel post deficit below what it would otherwise have been, without nullifying its original purpose as a "small parcel" transportation service. In the government's 1952 fiscal year, which included six months of parcel post operation under the larger limits, 93.77 per cent of all parcel post packages weighed 20 lb. or less; the average weight of slightly over one billion packages was only 6¼ lb.

But the restrictions have helped the REA—as well as its truck and freight forwarder competitors. For that reason, the agency is opposing H.R. 2685, a bill now pending in Congress to restore parcel post limits to pre-1952 levels by the outright repeal of Public Law 199.

How the reduction has helped is shown by the fact that, in 1952, express traffic increased by about 15 million shipments, or 28 million pieces, over 1951; the agency's 1952 payments to railroads for handling its traffic were about $50 million more than in 1951. That still leaves railway receipts from express traffic about that same amount ($50 million) below the express service costs of the railroads. The improvement, nevertheless, was encouraging; but for it, Mr. Hammell concedes frankly, "the railroads might not have renewed the agency's contract."

For the first 11 months of 1953, the improvement was less evident. Express revenues were almost identical with those for the same period of 1952, but a reduction in expenses permitted a small increase—from $135,612,481 to $137,892,669—in payments to the railroads. Even this small increase, however, may be considered encouraging, since the agency achieved it in the face of: (1) A wage increase, with offsetting rate increases not becoming effective until August 20; (2) strikes at three key cities; and (3) declining business in the year's closing months.

Assuming that external conditions, and especially its competition with parcel post, continue on a favorable basis, REA officers are reasonably optimistic as to the future. The agency, they concede, has got to be good enough to deserve the rates it has to ask—rates which, unlike parcel post charges, must cover all costs. It has got to continue to work for, and to win, "shipper acceptance." But they feel that the streamlined organization it has developed, and the operating improvements it has put into effect, will help to accomplish both these objectives, and thus to make it a valuable and revenue-producing ally of its owning railroads.

Operations Research for Railroads?

Railroad men attending R.S.P.A. seminar on Operations Research endorse it as valuable management tool—Pay-off set at 10-20 times investment

Maj. Gen. J. F. Uncles (left), the Army's chief of research and development, praised operations research as a management tool. At right, A. E. Perlman, executive vice-president, Denver & Rio Grande Western.

In Washington, February 24-26, 16 railroad men, members and guests of the Railway Systems and Procedures Association, in general agreed to recommend to their top managements that the carriers could very well use teams of operations research scientists to help them better define and meet problems facing the industry.

These decisions were made following a seminar on operations research sponsored by R.S.P.A., with technical assistance from the staff of the operations research office of Johns Hopkins University. The purpose of the sessions, was stated by B. E. Wynne, assistant to comptroller, Bessemer & Lake Erie, and president of R.S.P.A., as follows: "Should we endorse operations research as an effective, valuable implement for the railroad industry? Shall we recommend to our superiors that they plan to build an operations research team to assist them?" If the answer to these questions is in the affirmative, Mr. Wynne continued, what can R.S.P.A. do to help achieve the wedding of the railroads and operations research?

To say that all the railroad men present came away from the sessions panting to get teams of operations researchers working on their roads would be an overstatement. Early on the first day, one railroad executive stated that he thought the O.R. advocates' "feet were not exactly on the ground." This observation seemed to stem from his inability to get what was to him a satisfactory definition of what O.R. is. The operations researchers stated that this term is not easy to define, and that anyway the important thing is not what O.R. is but what it does.

On the other hand, executives of two railroads praised O.R. highly, basing their opinions on the activities of operations research teams presently working on those roads. The representative of one midwestern railroad stated that he was going home and recommend to his management that O.R. be put to work on his line. These opinions seem to represent the extremes, with most of the men present expressing rather cautious optimism as to their top managements' reactions to operations research.

Railroads represented at the seminar were: Denver & Rio Grande Western; Chesapeake & Ohio; Richmond, Fredericksburg & Potomac; Baltimore & Ohio; Bessemer & Lake Erie; Union; Chicago, Rock Island & Pacific; Great Northern; and Illinois Central. In addition, representatives of the Association of American Railroads and the Eastern Railroad Presidents Conference also attended the meetings.

What Did They Hear?

What the railroad men heard which enabled them to make these decisions was a general covering of the subject of operations research, including a number of case studies showing what O.R. had been able to do for various companies, including a number of railroad suppliers, and how it had gone about accomplishing the results. In addition, Maj. Gen. J. F. Uncles, chief of research and development for the Department of the Army, spoke rather generally but favorably of what operations research is doing for the Army.

Dr. Ellis Johnson, director of the Operations Research Office of Johns Hopkins University, was the principal speaker on the first day's program. Operations Research, he said, is not new, although it does make use of some newly developed tools. Many of its techniques have been used for years by industrial engineers and others. However, the O.R. approach is the team one, hence it brings more than one tool or discipline to bear on problem stating and solving. The O.R. approach, Dr. Johnson said, is on an interdepartmental basis, where that of the industrial engineer or other problem solver, frequently through no fault of his own, is restricted to one department. An operations research team, he said, evolves solutions that are best for the whole company, not just for one department in the company.

Dr. Johnson discussed the case of Seabrook Farms, frozen foods manufacturer, as one which emphasized the value of this system. Seabrook's management, he said, thought it had a labor problem, and it did, in one sense. However, the labor problem was solved by an O.R. team which discovered that the growth and harvesting of peas and other vegetables could be scheduled, thus stabilizing employment and eliminating almost completely the need for migratory labor. Dr. Johnson also emphasized that an operations research team cannot substitute for the executive. It can only render him an assist by giving him better information on which to make his decisions.

Asked what the "pay-off" might be from the work of

At speaker's stand, C. A. Strickland, manager, office methods and procedures, Baltimore & Ohio and vice-president of R.S.P.A., an endorser of O.R., was in charge of the program. At left, B. E. Wynne, R.S.P.A. president.

an O.R. group, the length of time required to realize that return, and how much one should spend for operations research, the speaker estimated that the pay-off might be 10 to 20 times what one spent for O.R., providing one didn't put in "too much." In this connection also, Dr. Johnson warned railroads against hiring just anyone who claimed to be an operations researcher. There are, he said, just as many "quacks" around the fringes of O.R. as there are in any other field. Dr. Johnson "guessed" that a company with 10,000 or more employees could afford to spend 0.5 to 1.5 per cent of its gross sales for O.R. and that generally the direct pay-off will not come until three to five years have gone by, although this depends on the type of problem attacked and other factors, which could shorten this period.

The speaker observed that the smallest recommended size for an O.R. group is five persons, but that a practicable minimum is about 15, with as many different backgrounds as possible. The reason for this, he said, is that the smaller the group, the more likely that predictable pattern solutions conforming to the particular knowledges of its members will result. He further recommended that a group of railroads might be wise to hire an O.R. group to work for all of them, rather than have each railroad go off on its own.

One operations researcher, who has done some work with railroads, was asked for some reasons why the railroads should consider operations research as a management tool. He could think of at least 25, he said, and proceeded to name, among others, United States Steel, General Electric, General Motors, Westinghouse Electric, "and practically all the air lines" as users who have benefitted from operations research. Asked if operations researchers would be interested in working with the railroads, this man replied, "Yes and no." Amplifying, he said operations researchers would like working on railroads because there is "romance" in railroading; railroading involves the whole economy of the nation; and there is a wealth of data available regarding rail operations, making the job relatively easy. On the other hand, he said, operations researchers already have more work than they can handle. Too, the railroads are too "compartmentalized" to make for easy working conditions. And finally, the railroads' competitors, the air lines particularly, already are using operations research and have provided the necessary staff people to work with operations research teams.

Operations Analysis

A. E. Perlman, executive vice-president of the Denver & Rio Grande Western, expressed the opinion that analysis of operations in the next ten years would save more for the railroads than had the diesel. He described the work of the Rio Grande's junior board of directors and of the flying squads of "nosey young men" as the Wall Street Journal has called them, or "junior jets" as they are known on the property. Mr. Perlman said he thought he and his subordinates probably had been doing operations research for many years. Operations researchers present felt that much, but far from all, of the effort of the Rio Grande had been spent in efforts "to put out fires" rather than to get at the real roots of trouble as an O.R. team would have done.

Yard Design

R. D. Lake, staff assistant to the president of the Union, told how through the use of industrial engineering methods that road had been able to determine the size, layout and many other features connected with the building of a new hump-retarder classification yard near Pittsburgh. Basic to this approach were careful studies of the traffic pattern of the railroad, the establishing of realistic time standards for performing certain types of switching operations, and operation of a dummy "paper" yard. The "paper" yard handled actual traffic received by the Union which would have gone into the proposed yard, had it been in operation. Dr. Thornton Page, deputy director of the Operations Research Office at Johns Hopkins, stated the Union's approach to the problem had been very similar to that of O.R. scientists using the "game" theory which was developed by Von Neumann and others.

Information Handling

C. R. Pippenger, project engineer for Associated Merchandising Corporation, a group of 26 large department stores, said his employers had accepted two fundamental principles behind O.R. when they had established such a team: (1) management wishes to be constructively and deeply criticized; and (2) managements have staffed their organizations with scientifically trained people and allowed them to go to work. These staffs, he said, where information handling was involved, kept abreast of what equipment was available today, as well as with what was on the drawing boards and would be available years hence.

All paperwork is information handling, Mr. Pippenger said. Those digging into the subject should determine whether each type of information should flow rapidly or slowly, and the distance over which the information must be "transmitted." This makes a big difference in the kind

of equipment bought for performing various jobs, thus affecting the cost of the information handling system. Mr. Pippenger said an industry should work closely with manufacturers if it wants equipment which is tailored to its needs.

O.R. in Maintenance of Way

R. R. Crane, director of operations research of Melpar, Inc., said his group had done some research into the problems of rail replacement and maintenance. Failure theory, he said, is enabling them to predict how long rail should be allowed to stay in track, the extent to which preventive maintenance may extend rail life, and the most economical replacement schedule for rail and ties. Also, he said, the most economical size of work gang can be figured for a given set of operating conditions.

By using information developed by O.R. methods, said Mr. Crane, managements can be helped in establishing a desirable and realistic level of maintenance work; the amount of the maintenance budget which should be allocated to each part of a railroad system; the proper weight of rail to use; and whether or not the use of continuous welded rail is justified. Mr. Crane made it clear that these conclusions were based on studies actually made on a railroad.

O.R. in an Inspection Operation

L. G. Mitten, professor of industrial engineering at Ohio State University, told how an operations research team, made up of an industrial engineer and a statistician, a psychologist and an optometrist had been able to improve the quality of inspection operations of the Timken Roller Bearing Company. The problem turned out to be one of motivating workers to better performance. The motivation factor developed was a time-off bonus which was given the worker when predetermined work standards of quality and quantity were achieved by him.

Before the improved production could be achieved, many inspection procedures had to be changed. In order to do this it was necessary to study the capabilities of the human eye, which, the researchers found, saw considerably less than 100 per cent of the surface of each bearing. As a result of these findings a new inspection instrument was developed which largely made up for these human deficiencies. Also, the team designed a variable speed control for the conveyors which brought the bearings to the inspectors. All of these things combined have led to a 200 per cent increase in the quantity and quality of the inspectors' work.

O.R. and Trailers-on-Flat-Cars

R. L. Funkhouser of the Stanford Research Institute, Stanford, Cal., stated that four tools of operations research could help managements make many decisions involved in integrating rail-truck transport. For example, he said, if a railroad wants to get revenue information on any basis, this could be done to an accuracy within five per cent by taking a small sample of the traffic moving between given points. Such a sampling would save more than 90 per cent of the cost of processing a 100 per cent sample, he said. And since the time required to process a 100 per cent sample would be considerable, current figures at the time of completing analysis of the larger sample would differ from the sampling findings by an unpredictable margin.

Dr. Harold O. Davidson of the Operations Research Office, Johns Hopkins University, and chairman of the technical advisory committee to R.S.P.A., said O.R. could be important to business as society becomes more complex.

The mathematical model, Mr. Funkhouser said, would show graphically the relationships between the various elements of cost in the "piggyback" operation. Using hypothetical figures, he showed that a railroad would be wise to use flat cars which would take two trailers rather than one. Linear programming could enable the carriers to do some effective equipment distribution among terminals served by "piggyback." Feed back, he concluded, can help the carriers analyze "the mutually interacting effects of a change in a balanced system." Thus, for example, the effect in revenue and expense changes due to competition from other railroads could be predicted and strategy for meeting the situation could consequently be planned.

O.R. in Production Scheduling

Russell L. Ackoff, director of industrial research of Case Institute of Technology, Cleveland, described the work of a team of operations researchers which started out to try to help Warner & Swasey, a machine tool manufacturer, get better control of inventories. Before the analysis was completed the team became involved in production scheduling, cost accounting, traffic analyses, information handling and financing. This came about because it was found that the optimal inventory level had a very direct relationship to production costs. While it had been generally considered that the level of inventories should be lowered, the team's findings indicated that exactly the opposite was true, from the standpoint of the company as a whole. This, Dr. Ackoff said, dramatically illustrated the value of the operations researchers' approach to a problem on the over-all company-wide basis.

(*Continued from page 16*)
Mr. Hinshaw also said, "has become the largest single shipper in the world. The cargo tonnage and passenger transportation it controls can be used by transportation officers to play one carrier off against another . . . so that the carriers are encouraged to reduce the rates published by them in their tariffs. . . .

"The point has been reached where the . . . government is now in a position to violate, and is violating, the anti-discrimination provisions of the law which one branch of our government is bound to enforce. . . . The provisions of section 22, which authorize contract rates for the government, in effect authorize discrimination in favor of the world's biggest shipper and against all of the smaller ones."

House Group Okays Fare Tax Cut to 10 Per Cent

A reduction from 15 to 10 per cent in the passenger-fare tax has been approved by the House Committee on Ways and Means.

Such a cut, which would put the levy back on the pre-1944 basis, is among excise-tax adjustments proposed in a bill (H.R. 8150) which was introduced March 2 by the committee's chairman — Representative Reed, Republican of New York.

Awards

Freedoms Foundation Honors Presented

The Norfolk & Western has won two George Washington Honor Medals given by the Freedoms Foundation for "outstanding achievement in helping bring about a better understanding of the American way of life." The N&W was honored for the excellence of its employee magazine and for its national advertising campaign in newspapers and magazines.

George Washington Honor Medals have been awarded to W. G. Vollmer, president of the Texas & Pacific, and Alan T. Myers, for his editorship of the T&P's employee publication, Texas & Pacific Topics. The T&P itself received two distinguished service awards for its advertising campaign and its employee publication.

Two manufacturing divisions of the Robertshaw-Fulton Controls Company also have won Freedoms Foundation awards. The Grayson Controls division was honored for its employee publication, and an award also went to Joseph McMillan, its editor. The employee publication of the Robertshaw Thermostat division won a George Washington Honor Medal.

Figures of the Week

Freight Car Loadings

Loadings of revenue freight in the week ended February 27, which included the Washington's Birthday holiday, totaled 595,031 cars, the Association of American Railroads announced on March 4. This was a decrease of 23,592 cars, or 3.8 per cent, compared with the previous non-holiday week; a decrease of 73,623 cars, or 11 per cent, compared with the corresponding holiday week last year; and a decrease of 160,813 cars, or 21.3 per cent, compared with the equivalent non-holiday 1952 week.

Loadings of revenue freight for the week ended February 20 totaled 618,623 cars; the summary for that week follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, February 20

District	1954	1953	1952
Eastern	109,593	126,230	123,072
Allegheny	119,880	146,325	141,197
Pocahontas	43,834	46,950	58,009
Southern	120,359	128,650	129,771
Northwestern	71,190	73,171	66,391
Central Western	99,869	111,532	110,966
Southwestern	53,898	56,572	54,145
Total Western Districts	224,957	241,275	231,502
Total All Roads	618,623	689,430	683,551
Commodities:			
Grain and grain products	43,877	37,968	43,276
Livestock	5,563	6,515	7,492
Coal	103,774	118,870	140,582
Coke	9,144	15,183	16,115
Forest products	39,137	44,236	40,651
Ore	15,493	20,078	19,263
Merchandise l.c.l.	64,781	69,659	66,142
Miscellaneous	336,854	376,921	350,030
February 20	618,623	689,430	683,551
February 13	623,706	681,604	737,776
February 6	624,385	690,613	733,919
January 30	628,190	697,442	731,218
January 23	617,226	697,515	728,015
Cumulative total, eight weeks	4,834,035	5,412,688	5,716,965

In Canada.—Carloadings for the seven-day period ended February 14 totaled 68,546 cars, compared with 69,038 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
February 14, 1954	68,546	29,524
February 14, 1953	71,108	32,499
Cumulative Totals		
February 14, 1954	404,060	176,146
February 14, 1953	434,639	197,367

Rates & Fares

Furlough Fares Extended

Furlough fares for military personnel traveling in uniform at their own expense have been extended to June 30. They had been scheduled to expire March 31.

The furlough fares are tax-exempt, round-trip coach rates on the basis of 2.025 cents per mile or less.

People in the News

B. H. Meyer Dies

Balthasar H. Meyer, a member of the Interstate Commerce Commission from January 1, 1911, until April 30, 1939, died recently in Washington, D.C. Mr. Meyer was 87. Since leaving the I.C.C. he had worked as a consultant on transportation and mediation problems.

Supply Trade

Henry Magnuski, chief engineer of the research department, **Motorola Communications and Electronics** division, has been named associate director of research.

Charles L. Stroup, chief engineer for **Hubbard & Co.,** has been made vice-president in charge of research, at Chicago.

W. Scott McCormick will represent the maintenance chemicals department of **Pennsylvania Salt Manufacturing Company** in the transportation field, covering Ohio and counties in western Pennsylvania and southern Michigan.

Pacific Coast Borax Company has established a new railroad department in its agricultural sales division, to be headed by **G. C. Buskirk,** who has been with the company since 1948.

The Exide Industrial division of **Electric Storage Battery Company**

ALLAN N. CAMPBELL, vice-president of International Equipment Company, Industrial Equipment Company and Service Specialty Company, Montreal, who has been elected president. Mr. Campbell succeeds George Verner, who has retired as president and chairman of the board.

ROBERT W. CLYNE, who has been elected vice-president—marketing, of Pressed Steel Car Company, at Chicago. Mr. Clyne was previously an officer and divisional sales manager of American Steel Foundries Company.

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has appointed **Thomas H. Dooling,** formerly Pacific coast sales manager, as western industrial sales manager; and **Herbert F. Sauer,** branch manager at Chicago, to midwestern industrial sales manager. **C. W. Wilson** and **Willard W. Grundel** have been made branch managers at Chicago and San Francisco, respectively.

Leo G. Sands has been named administrator of railroad communications sales for **Radio Corporation of America.** A photograph of Mr. Sands was published in *Railway Age,* May 25, 1953, when he became sales manager of Langevin Manufacturing Corporation.

R. A. Miller has been named manager of manufacturing of the locomotive and car equipment department of **General Electric Company,** at Erie, Pa. Mr. Miller has been associated with the company at Erie since 1923, his most recent position being manager of the employee relations section of the locomotive and car equipment department.

DUNCAN W. FRASER, who has been chairman of the board of American Locomotive Company and Montreal Locomotive Works since 1945, will retire late in April, following the annual meetings of stockholders.

Equipment & Supplies

FREIGHT CARS

Erie to Buy 100 Flat Cars For Future Piggyback Use

The Erie's board of directors has authorized purchase of 100 specially equipped roller-bearing flat cars "with an eye toward possible future use in piggyback trailer service," Paul W. Johnston, Erie president, has announced. It is estimated the cars will cost over $1,000,000.

Specifications will call for a 75-ft. car, 9½ ft. wide, with a capacity of at least 60 tons, equipped with four-wheel, roller-bearing trucks for use in high-speed service. Rubber-cushioned draft gears will be used with tight-lock couplers.

"We can use these trailer-carrying cars in regular service for hauling other freight until such time as movement of highway trailers by our railroad becomes a reality," Mr. Johnston said. "The Erie and other railroads in the east have been studying the revenue advantages of carrying trailers on flat cars. From an operating standpoint, it is mechanically feasible. The problem lies in establishing rates that will return a profit without disturbing the entire freight-rate structure or jeopardizing the railroads' direct relations with shippers. We think these problems can be overcome. The Erie wants to be ready to start rail-trailer service when these matters are settled to the satisfaction of everyone."

WESTINGHOUSE AIR BRAKE FILM WIDELY AVAILABLE

Arrangements have been made whereby the Westinghouse Air Brake Company's 16-mm. motion picture about the railroad industry, "At This Moment," can be made available for widespread public showings. (*Railway Age,* October 5, 1953, pages 11 and 92, and October 19, page 12).

For showings to all types of group audiences where admission would not be charged—such as service, civic and social clubs, and at churches, colleges and schools—inquiries should be addressed to J. R. Bingham, Association Films, Inc., 347 Madison avenue, New York 17, or to William S. Greene, Jr., United World Films, Inc., 1445 Park avenue, New York 29. On such non-theatrical showings the Westinghouse company pays the booking charge; the only cost to the group viewing the film is return postage on the film itself, which is estimated at from 25 to 30 cents.

Railroads wishing to book the film direct must pay the $2.75 booking charge, plus return postage, but could schedule two or three showings within the time limit allowed on each booking.

Information about free television showings of the film is obtainable from Robert C. Molusky, Princeton Film Center, Inc., Princeton, N.J. About 200 prints of the film have been made available by Westinghouse to the listed distributors.

Pullman Completes 100 Cushion Underframe Cars

On March 1, the Pullman-Standard Car Manufacturing Company's Michigan City, Ind., plant completed 100 PS-1-type box cars equipped with cushion underframes. The cars were ordered by eight different roads. They are the first to be built aside from two experimental cars which have been in service on the Western Pacific for the past year and which have been reported as cutting breakage of fragile lading by as much as 60 per cent.

The Pullman-Standard rubber cushion is located at the center of the center sill, and is coupled to the car body by rubber compression pads. Because of its design, the gear cannot go "solid" against metal but continues to compress the rubber. Conventional draft gear is used at each end of the center sill. This gives protection to the center sill itself, as well as providing additional cushioning for the car and its lading.

The 100 new cars are being delivered as follows: 10 to the Erie; 5 to the Bangor & Aroostook; 10 to the Western Pacific; 25 to the New York Central; 5 to the Norfolk & Western; 10 to the Chesapeake & Ohio; 20 to the Pennsylvania; and 15 to the Great Northern.

The **Western Pacific** has ordered 100 50-ton double-door box cars from the Pullman-Standard Car Manufacturing Company at a cost exceeding $800,000. Delivery is scheduled for April.

LOCOMOTIVES

The **Georgia** has ordered three 1,750-hp. diesel road-switchers from the Electro-Motive Division of General Motors Corporation at an estimated unit cost of $159,634. Delivery is scheduled for next May.

The **Western of Alabama** has ordered two 1,750-hp. diesel road-switchers from the Electro-Motive Division of General Motors Corporation at an estimated cost of $319,268. Delivery is expected next May.

Organizations

Transport Talks Set for San Francisco March 10

Forty national, state and local organizations in California will join with the Transportation Association of America in presenting on March 10 a Pacific Slope Institute of Transportation. Major subjects at the one-day institute, to be held in the Mark Hopkins Hotel, San Francisco, will be the time-lag in adjusting common-carrier rates to meet increased operating costs, effect of unprofitable services, and federal transportation excise taxes.

Perishables Handling Conference Next Week

The eighth annual National Conference on Handling Perishable Agricultural Commodities—formerly known as the "perishables short course"—will begin on the West Lafayette (Ind.) campus of Purdue University March 15. It will continue through the morning of March 19.

J. Carrol Bateman, assistant chairman of the Eastern Railroad Presidents' Conference, will describe the problems and future of railroads at a "get acquainted" buffet dinner on the evening of the 15th. W. A. Kluender, forestry and agricultural agent of the Chicago & North Western, will be toastmaster. Other speakers on the opening program are: Dr. F. L. Hovde, president of the university; A. L. Batts, executive vice-chairman of the A.A.R.'s Freight Claim Division; and Q. J. Augello, vice-president and general traffic manager of F. H. Vahlsing, Inc., New York.

The bulk of the program, as in the past, will deal with specific commodities, their handling, and the nature, origin and control of specific diseases observed in transit. The course is a joint project of the Loss & Damage Prevention Section of the A.A.R.; the American Railway Development Association; and the university's college of agriculture and agriculture extension service. It is presented in cooperation with the Western Weighing & Inspection Bureau, the Railroad Perishable Inspection Agency the Transcontinental Freight Bureau, and the U.S. Department of Agriculture.

The spring meeting of the **American Council of Railroad Women** will be held at the Shoreham Hotel, Washington, D.C., March 20. At the morning session Virginia Tanner, editor of the B and O Magazine, will moderate a discussion on "What We as Women, or Individuals, Can Do to Help Our Railroads During the Present Period of Economic Readjustment." At the luncheon to follow, Mrs. Ivy Baker Priest, treasurer of the United States, and a member of the board of the National Safety Council, will speak on "National Safety as it Pertains to Railroads," and Beatrice Aitchison, director, transportation research, of the Post Office Department, will speak on "The Conflict Between Passenger and Mail Needs." Guest speaker at the evening dinner will be Eugene S. Williams, chairman of the board of the Western Maryland.

Tenth annual reunion of the **No Work-No Worry Club** will be held March 11 at the Grey Gull Inn, Clearwater, Fla. The organization invites retired railroad officers and industrial traffic men to join in the day's program, which begins at 11 a.m.

W. M. Keller, director of mechanical research, Association of American Railroads, will speak on "A.A.R. Research," at a meeting of the **Eastern Car Foreman's Association,** at 7:45 p.m., March 12, in the Engineering Societies building, New York.

The 93rd regular meeting and election of officers of the **Pacific Coast Shippers Advisory Board** will be held at the U. S. Grant Hotel, San Diego, Cal., March 11-12. A. J. Seitz, executive vice-president, Union Pacific, will be guest speaker at a luncheon March 12.

A regional meeting of the **Fire Protection & Insurance Section, Association of American Railroads,** will be held in Room 1538, 230 Park Avenue building, New York, at 10 a. m., March 22.

The **Traffic Club of St. Louis** will sponsor a Military Affairs luncheon at the Statler Hotel on March 15, with Brigadier General Bertram Francis Hayford as guest speaker.

The 37th annual meeting and dinner of the **Pacific Railway Club** will be held in the Palace Hotel, San Francisco, at 6:30 p.m., March 18. Speaker will be Harold O. MacLean, president, Railways Ice & Service Co.

The **Ohio Valley Transportation Advisory Board** will hold its 109th regular sessions at the Deshler-Hilton Hotel, Columbus, March 9-10, under joint auspices of the **Columbus Chamber of Commerce** and the **Columbus Transportation Club.** Speaker at a luncheon on March 10 will be Donald Morewood, assistant vice-president—traffic, United States Steel Corporation.

The International Summer Institute of the **Transportation Department** of the **National Council of Young Men's Christian Associations** will be held at Silver Bay, N.Y., June 20-25. Effective April 1, Laurence B. Cairns will become a member of the Transportation Department staff, with headquarters at 291 Broadway, New York; he has been assigned to implement a recently completed study entitled "Program for the Railroad Y.M.C.A."

Securities

Application

DONORA SOUTHERN.—To issue a $745,900 note to its parent company, United States Steel Corporation, to refund two existing notes and raise additional working capital. The present notes total $477,500, with interest at 2¼ per cent. The new note would carry a 4 per cent rate, but the interest would be on an "if earned" basis. About $43,400 of proceeds from the new note would be used to complete "general rehabilitation" of the DS.

Authorizations

CHICAGO & NORTH WESTERN.—To assume liability for $6,495,000 of equipment trust certificates, to finance in part nine diesel units and 1,030 freight cars costing an estimated $8,125,835 (*Railway Age*, January 25, page 17). Division 4 approved sale of the certificates for 99.34, based on interest at 2⅞ per cent. Winning bid for the issue was by Halsey, Stuart & Co. and 11 associates. The certificates, dated as of March 1, will mature in 15 annual installments of $433,000 each, beginning March 1, 1955. They were reoffered to the public at prices yielding from 1.75 to 3.05 per cent, according to maturity.

PENNSYLVANIA.—To assume liability for $5,265,000 of series BB equipment trust certificates, to finance in part 33 diesel units and 320 freight cars costing an estimated $7,020,000 (*Railway Age*, February 1, page 30). Division 4 approved sale of the certificates for 99.5626, based on interest at 2¾ per cent. Winning bid for the issue was by Halsey, Stuart & Co. and five associates. The certificates, dated February 1, will mature in 15 annual installments of $351,000 each, beginning February 1, 1955. They were reoffered to the public at prices yielding from 1.75 to 2.9 per cent, according to maturity.

Security Price Averages

	March 2	Prev. Week	Last Year
Average price of 20 representative railway stocks	61.71	61.84	68.70
Average price of 20 representative railway bonds	94.38	94.04	94.95

Dividends Declared

BEECH CREEK.—50¢, quarterly, payable April 1 to holders of record March 5.

BOSTON & ALBANY.—$2, payable March 31 to holders of record February 26.

CENTRAL OF GEORGIA.—5% preferred A, $10, accumulative; 5% preferred B, $10, accumulative, both payable April 1 to holders of record March 24.

CHICAGO SOUTH SHORE & SOUTH BEND.—25¢, quarterly, payable March 15 to holders of record March 5.

DELAWARE & HUDSON.—$1, quarterly, payable March 29 to holders of record March 12.

DELAWARE, LACKAWANNA & WESTERN.—75¢, increased, payable April 1 to holders of record March 12.

EUROPEAN & NORTH AMERICAN.—$2.50, semi-annual, payable April 3 to holders of record March 9.

KANSAS CITY SOUTHERN.—common, 75¢, payable March 15 to holders of record March 1; 4% preferred, 50¢, quarterly, payable April 15 to holders of record March 31.

NORTHERN PACIFIC.—75¢, quarterly, payable April 23 to holders of record April 2.

READING.—4% 2nd preferred, 50¢, quarterly, payable April 8 to holders of record March 18.

UNION PACIFIC. — common, $1.25, quarterly; 4% preferred, $1, semiannual, both payable April 1 to holders of record March 8.

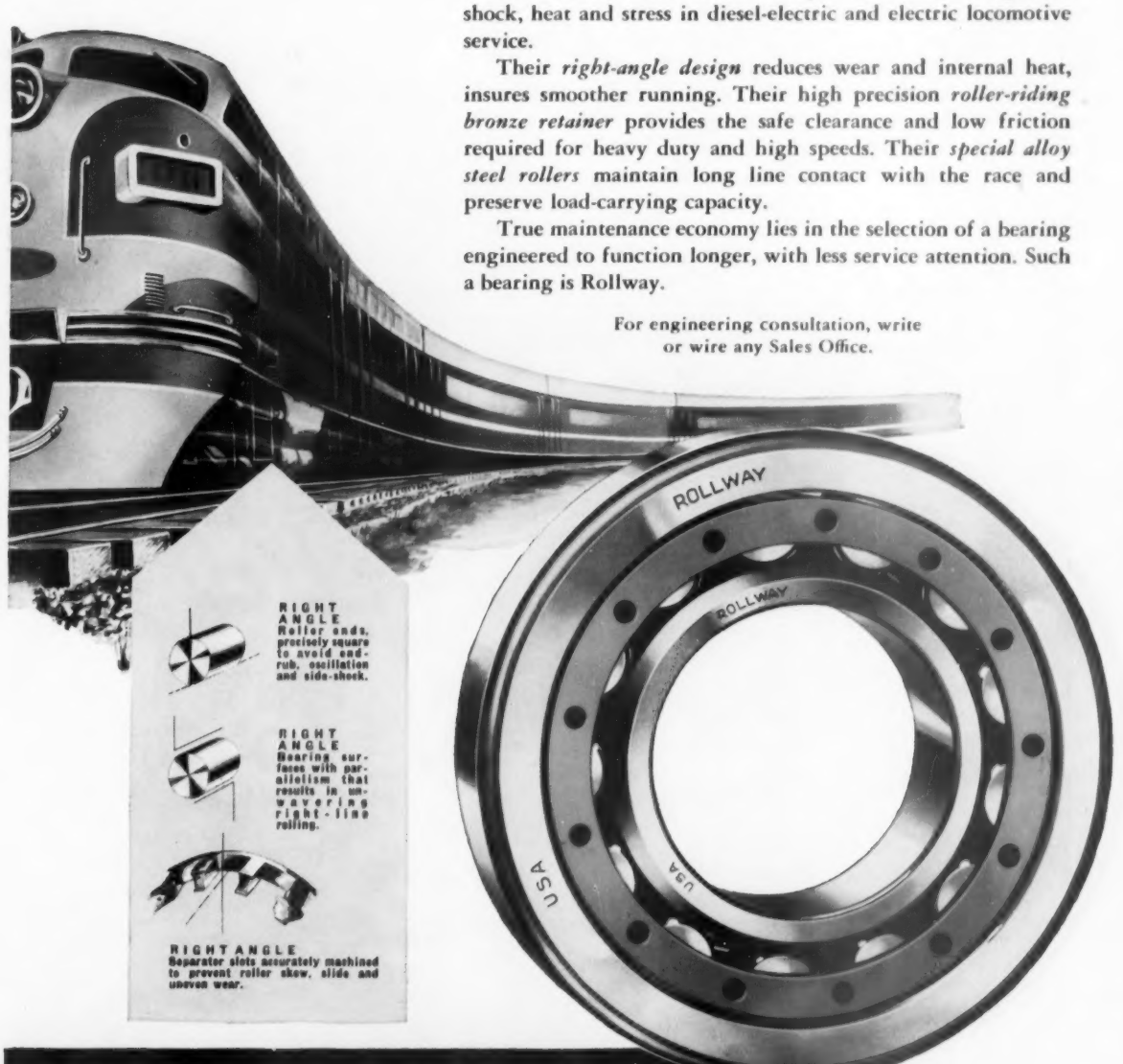
ENGINEERED FOR ECONOMY
in Maintenance

Since 1931, Rollway Bearings on Traction Motor Armature Shafts have shown remarkable ability to withstand the rigors of shock, heat and stress in diesel-electric and electric locomotive service.

Their *right-angle design* reduces wear and internal heat, insures smoother running. Their high precision *roller-riding bronze retainer* provides the safe clearance and low friction required for heavy duty and high speeds. Their *special alloy steel rollers* maintain long line contact with the race and preserve load-carrying capacity.

True maintenance economy lies in the selection of a bearing engineered to function longer, with less service attention. Such a bearing is Rollway.

For engineering consultation, write or wire any Sales Office.



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BEARINGS

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SYRACUSE, N. Y.

SALES OFFICES

Philadelphia	Boston	Pittsburgh
Cleveland	Detroit	Chicago
Houston	Los Angeles	Milwaukee
Toronto	San Francisco	Seattle

To direct popular attention to the remarkable achievements in railroading, this advertisement has been run in national business magazines.

The locomotive horn

INDUSTRIAL PRODUCTS DIVISION . . . air compressors, cylinders, actuators, air control devices of all kinds; engineered pneumatic control systems.

UNION SWITCH & SIGNAL DIVISION . . . centralized traffic control, car retarder, automatic train control, train communication and interlocking systems and apparatus.

MELPAR, INC. . . . research, development and manufacture of military electronic systems. Also serves as central research laboratory for Westinghouse Air Brake Company.

that fooled moose

Up in the north woods country, the local moose have been waging a battle against man; and the moose seem to be winning.

It all started when the railroads began to operate Diesel trains through the moose country. To a moose, the Diesel air horn sounded just like the mating call of his lady-love, and he happily came out of the woods to further the acquaintance. You can imagine his frustration when he found nothing but a railroad train—so, doing what came naturally, he charged the locomotive.

This was awfully hard on the moose population, so the conservation-minded railroad men came to Westinghouse Air Brake Company and asked us to please design an air horn that did *not* sound like a moose. More than that, they said, "Make it sound like the old steam whistle."

It wasn't easy. For one thing, the compressed air system on a Diesel operates at much lower pressure than a steam locomotive boiler. You have to use a completely different type of horn mechanism—one that simply does not generate the musical overtones of the steam whistle.

We finally had to construct a musical chord using *three* individually tuned horns, and this "Pneuphonic" horn comes mighty close to duplicating the old steam whistle. At least it's good enough for the moose, because they don't bother the trains anymore. Naturally, we are pleased that Westinghouse Air Brake Company could serve in this noble cause.

Solving the problem of the air horn illustrates the detailed engineering given to all air brake systems and accessories. To solve similar tough problems in other fields, call in any division or subsidiary of Westinghouse Air Brake Company.

AIR BRAKE DIVISION, Wilmerding, Pa.
Manufacturers of air brake equipment, brake slack adjusters, anti-wheel-slide devices, compressors, and accessories for all rail vehicles and trolley buses.

Westinghouse Air Brake COMPANY

EXECUTIVE OFFICES:
THREE GATEWAY CENTER, PITTSBURGH 22, PA.

LE ROI COMPANY . . . internal combustion engines, portable air compressors, Tractair units, rock drills for the construction, petroleum and mining industries.

GEORGE E. FAILING COMPANY . . . portable drilling rigs for oil, water and mineral exploration and a variety of equipment and supplies.

LE TOURNEAU-WESTINGHOUSE COMPANY . . . earth moving equipment, including tractors, scrapers, haulers and other construction tools.

Another great railroad reflectorizes

Milwaukee's Central Sign Shop produces 1,000 signs a month!

The Milwaukee Road's sign modernization program calls for replacing 80,000 station and roadway markers with new signs reflectorized with "Scotchlite" sheeting within the next six years. To meet this need, their Central Sign Shop is turning out more than 1,000 signs a month using the economical, high-speed "Scotchlite" vacuum applicator. This applicator bonds sheeting to aluminum sign surfaces, either individually or in "gang-up" layouts —in just six minutes flat! What's more, it doesn't need special skills or long training periods to operate.

We'll be glad to send you complete information on how you can establish a central sign shop capable of producing signs of "Scotchlite" Reflective Sheeting in quantity at low cost. Write today.

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SCOTCHLITE

BRAND

REFLECTIVE SHEETING

The term "Scotchlite" is a registered trademark of Minnesota Mining and Mfg. Co., St. Paul 6, Minn. General Export: 122 E. 42nd St., New York 17, N.Y. In Canada: London, Ont., Can.

QUICK APPLICATION of "Scotchlite" Sheeting to metal backing is accomplished in the Milwaukee Sign Shop with this 5′ x 12′ vacuum applicator. "Scotchlite" Reflective Sheeting meets and exceeds AAR signal section specifications.

EASY POSITIONING of "Scotchcal" letters on signs is accomplished with this easy-to-make template. Pre-cut letters, numbers, and borders can be handled this time-saving way.

in Local passenger service

A single unit Train Master has equalled a 4-8-4 steam locomotive on local passenger schedules.

Money spent on steam maintenance . . . adds to the cost

Money invested in Train Masters . . . adds to the profit

TRAIN MASTER

. . . leader in today's trend toward more powerful . . . more useful Diesel motive power.

Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Illinois

FAIRBANKS-MORSE

a name worth remembering when you want the best

DIESEL LOCOMOTIVES AND ENGINES • RAIL CARS AND RAILROAD EQUIPMENT • ELECTRICAL MACHINERY • PUMPS • SCALES • WATER SERVICE EQUIPMENT • HAMMER MILLS • MAGNETOS

Railway Officers

BURLINGTON. — **W. R. Eble,** general superintendent at Galesburg, Ill., has been advanced to assistant general manager at Chicago. Succeeding Mr. Eble is **Edwin R. Shrader,** division superintendent at Hannibal, Mo. **John C. Starbuck,** division superintendent at McCook, Neb., has been appointed general superintendent at Burlington, Iowa, while **Elwood C. Ackerman,** superintendent of terminals at St. Louis, succeeds him. Named to replace Mr. Ackerman is **Charles W. Dentner,** division superintendent at Galesburg, who in turn has been succeeded by **Charles J. Miller,** assistant to general manager at Chicago. **Henry A. Benedetto,** division superintendent at St. Joseph, Mo., is Mr. Shrader's successor, while **Albert E. Way,** assistant to general manager at Omaha, replaces Mr. Benedetto. Mr. Way is succeeded by **Jack E. Hamer,** assistant division superintendent at Centralia, Ill., who in turn is replaced by **J. M. Turner,** assistant superintendent at Creston, Iowa. **Richard G. Johnson,** division trainmaster at Aurora, Ill., succeeds Mr. Turner, while **Walker S. Johnston,** division trainmaster at Galesburg, transfers to Lincoln, Neb.

CHICAGO RIVER & INDIANA — CHICAGO JUNCTION — INDIANA HARBOR BELT.—Martin W. Amoss, assistant to general manager—management services of the IHB, has been appointed superintendent of the CR&I—CJ, succeeding **Edward J. Crowley,** who has been named superintendent of the **Michigan Central** at Jackson, Mich. **W. J. Barry,** assistant superintendent of the CR&I, succeeds Mr. Amoss as assistant to general manager — management services of the IHB. **L. J. Cole,** assistant supervisor of power and train operations of the NYC at Cleveland, has been named assistant superintendent of the CR&I.

DELAWARE & HUDSON. — **Wendall J. Denton** has been appointed supervisor station service.

Arno P. Lehman has been named New England freight agent at Boston, succeeding **Eugene T. Cate,** who has retired after 50 years of railroad service, 44 of which were with the traffic department of the D&H.

ERIE. — **Benjamin Elkind,** principal assistant engineer at Cleveland, has retired after 43 years of service. **Walter O. Boessneck,** chief draftsman, has been promoted to office engineer, succeeding **Samuel B. Gill,** who has been promoted to grade crossing engineer. **Wendell R. Swatosh,** assistant to superintendent construction, has been promoted to assistant superintendent construction.

GRAND TRUNK WESTERN. — **V. C. Palmer,** superintendent, Detroit division, has been appointed assistant to vice-president and general manager at Detroit, succeeding **A. J. Gignac,** who has retired after 34 years of service. **N. E. Haversbaw,** trainmaster at

V. C. Palmer

N. E. Haversbaw

T. D. Ash

Pontiac, has been named superintendent terminals at Chicago, succeeding **T. D. Ash,** who has been appointed superintendent of the Detroit division. **B. L. Miller,** statistician of the Committee on Terminal Performance at Durand, succeeds Mr. Haversbaw as trainmaster at Pontiac.

MICHIGAN CENTRAL. — **Edwin H. O'Keefe,** superintendent at Jackson, Mich., has been appointed gen-

Edwin H. O'Keefe

eral superintendent at Detroit, a newly created position. **Edward J. Crowley,** superintendent of the **Chicago River & Indiana** and the **Chicago Junction** at Chicago, succeeds Mr. O'Keefe as superintendent of the MC at Jackson.

MISSOURI PACIFIC. — **W. J. Burton,** formerly assistant to chief engineer and more recently assigned to special duties, has retired.

O. C. Haenni, Jr., has been appointed assistant general freight agent at St. Louis. **E. L. Hoover** has been appointed district freight agent at Wichita, Kan., succeeding **R. T. Webb,** who has retired after more than 40 years of service.

MONON.—Charles E. Ragland, eastern traffic manager at New York, has been appointed assistant vice-president—traffic at Chicago. Mr. Ragland was born in Pell City, Ala., July

Charles E. Ragland

29, 1913, and joined the Monon in 1935 as chief clerk in the off-line service office at Birmingham, becoming eastern traffic manager in 1945.

Joseph J. Roth, traveling freight agent at Detroit, has been advanced to general agent there.

NEWBURGH & SOUTH

How to tie up a railroad...*fast*

Nobody could say how the fire started, but then, nobody had been in the power room or relay room for several hours. By the time the smell of fire seeped up to the towerman, the damage was done. Traffic was paralyzed all along the division.

Like an unexpected blow to a nerve center, fire in a signal control tower can tie up traffic in the twinkling of an eye. With this in mind, railroads are now installing fast, sure-acting C-O-TWO Railroad Fire Protection Systems to guard against the possibility of fire from short circuits or other electrical faults in the power room, relay room, control machine, cable trenches and vertical wireways of signal control towers.

At locations where a deep-seated, smoldering fire as well as a fast burning fire might occur, the smoke detector of a C-O-TWO Smoke Fire Detecting System automatically detects the first trace of smoke, smoldering or fire. Where flammable liquids might cause a flash fire, the heat detectors of a C-O-TWO Heat Fire Detecting System automatically sound a warning at the first flash of fire.

Then clean, dry, non-conducting, non-damaging carbon dioxide is quickly released from a C-O-TWO High Pressure Carbon Dioxide Type Fire Extinguishing System into the threatened area. The fire is out in seconds with a minimum of interruption to operations and the carbon dioxide disappears without a trace . . . harmless to equipment, wiring and finishes.

WHEN TRAFFIC STOPS . . . INCOME STOPS!

Don't take chances with your traffic control systems. Secure the benefits of highly efficient railroad fire protection engineering today . . . our extensive experience over the years is at your disposal without obligation. Get the facts now!

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MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeez-Grip Carbon Dioxide Type Fire Extinguishers
Dry Chemical Type Fire Extinguishers
Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems
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Sales and Service in the Principal Cities of United States and Canada

AFFILIATED WITH PYRENE MANUFACTURING COMPANY

SHORE. — R. G. Wintrich, chief engineer at Cleveland, has been appointed assistant general superintendent. **Albert Reese** has been named supervisor—labor relations, and **G. J. Gallitz** has been appointed superintendent car service and freight agent.

NEW YORK CENTRAL.—C. A. Pease, assistant industrial engineer—equipment, has been appointed industrial engineer — equipment, at New York, succeeding **James J. Wright,** who has been named manager of equipment of the **Pittsburgh & Lake Erie** (*Railway Age,* February 22, page 92). **G. K. Roush** succeeds Mr. Pease as assistant industrial engineer — equipment.

H. D. Johnston has been appointed superintendent of the Buffalo division at Buffalo, succeeding **G. W. Maxwell,** promoted to the newly created position of general superintendent of the New York district.

NICKEL PLATE.—J. T. Schenkel, assistant comptroller, has been appointed comptroller, with headquarters as before at Cleveland, succeeding **H. L. Lehmkuhle,** who retired December 31, 1953, after nearly 50 years of service. Mr. Schenkel was born in Huntington, Ind., May 7, 1891, and began his railroad career there in June 1907 as clerk in the stores and mechanical department of the Erie. After service in the accounting departments of the Illinois Central and the Wheeling & Lake Erie, he became assistant comptroller of the Nickel Plate December 1, 1949.

C. Gordon Cruickshank has been appointed assistant vice-president—traffic (rates) at Cleveland, succeeding **John J. Fitzpatrick,** who has been promoted to assistant vice-president—traffic (sales) at Cleveland. Mr. Cruickshank has been serving as vice-chairman of the Traffic Executive Association—Eastern Railroads, at New York. Mr. Fitzpatrick succeeds **Sylvester J. Witt,** whose appointment as vice-president—traffic was reported in *Railway Age* December 14, 1953.

Mr. Cruickshank was born in Edinburgh, Scotland, September 13, 1902, and began his railroad service in 1918 in the auditor's office of the Burlington.
(*Continued on page* 91)

PASSENGER CARS FOR THE UP

(Continued from page 62)

generators; the UP postal-mail-storage cars have 10-kw. generators. Spicer drives are used on all of the cars. Batteries of three manufacturers and of five different capacities are installed on the cars of the two orders. The UP passenger-carrying cars, except the sleepers, have batteries of 1,032-amp. hr. capacity. The batteries on the C&NW chair cars are 1,100-amp. hr. capacity; those on the UP sleepers, 1,176-amp. hr. capacity. The C&NW baggage cars have batteries of 450-amp. hr. capacity, and the UP baggage cars, of 510-amp. hr. capacity. The two orders include Gould-National, Exide, and Edison batteries. The cars are equipped with three electrical train lines. One is a 64-volt air-brake control line with 6-pole receptacles; another, a telephone train line with 14-pole receptacles, and the third, a two-conductor, 4/0 emergency lighting train line.

The dining room of the diner is lighted with fluorescent lamps in the cove fixtures. Sixty-cycle alternating current is supplied at 110 volts by two Safety motor-alternators with a combined capacity of 2,000 watts. A single 1,000-watt motor-alternator unit is installed in the kitchen.

All lighting in the chair cars and sleepers is incandescent. For razor and curling-iron outlets 110-volt 60-cycle a.c. power is supplied by a vibrator converter which has a capacity of 100 watts.

Radio and Public Address System

All passenger-carrying cars, except the C&NW chair cars, are equipped with radio, wire-recording and public-address systems. There are six speakers in the ceilings of the passenger compartment of each chair car, six in the ceiling of the dining room of each dining car, and four in each sleeping car. In each car there is a selector and volume control, a paging selector box, and a microphone and paging switch. Telephones for intratrain communication are placed in a cabinet above the steward's desk in each dining car and in each sleeping car.

All of the passenger-carrying cars have Commonwealth four-wheel trucks. The UP trucks have a 9-ft. wheel base and outside swing hangers. The C&NW trucks have a wheel base of 8 ft. 6 in. and the swing hangers are inside. The wheels are 36-in. multiple-wear rolled steel on the UP cars, and 36½-in. on the C&NW cars, all mounted on 6-in. by 11-in. axles. Hyatt roller bearings are applied on 30 UP chair cars, the diners, kitchen cars, and sleepers. Timken bearings are applied on eight UP chair cars and on the C&NW chair cars. On three of the latter and on all of the UP cars the bearings have ⅜-in. internal lateral; on the other C&NW cars the bearings are of the standard type. All journal boxes have stench-bomb heat indicators. Pedestals on the UP cars are 14-1/16 in. wide and have rubber-cushioned liners. Those on the C&NW cars are 13⅜ in. wide with steel liners. The trucks have Houdaille friction shock absorbers. Fabreeka sound-deadening material is applied on the journal-box equalizer seats, and above the equalizer springs.

Center plates are 24 in. in diameter. They have Thermoid wear plates and steel and linoleum liners underneath. There are no side bearings on the passenger-carrying cars and there is a clearance of ¼ in. between the truck and body bearing brackets.

The baggage and postal-mail-storage cars of both orders have six-wheel trucks, the axles of which are the same size as those on the passenger-carrying cars. The C&NW cars have Timken roller bearings. Four of the UP cars have Hyatt roller bearings and four, Timken bearings. The remaining 25 have SKF bearings.

All of the UP cars are equipped with HSC air brakes with electro-pneumatic straight-air control and AP Decelostats, Budd disc brakes are on all of the UP cars but only on the two outside axles of the six-wheel trucks. The diners, kitchen cars, sleepers, 25 of the UP baggage cars, and the UP postal-mail-storage cars have the New York Air Brake equipment. All of the chair cars and eight baggage cars have Westinghouse equipment. The C&NW chair cars and baggage cars have Westinghouse air brake equipment and Simplex unit clasp brakes. Peacock hand brakes, which develop braking power not less than 40 per cent of the loaded car weight, are on all of the cars.

All cars have Waughmat twin-cushion draft gears and tightlock couplers. Fabreeka sound-deadening material is applied on the coupler-carrier pads.

since 1939...the 5

IMPORTANT IMPROVEMENTS IN TRACTION MOTOR BEARINGS WERE PIONEERED BY SKF

Pinion End Bearing with M-2 Roller Riding Cage. Disassembly for inspection is easy—just slide out the inner ring; you can then move the rollers out of the outer ring groove, and rollers and M-2 Cage slide right out. Reassembly is just as easy.

SKF Commutator End Traction Motor Bearing. Crowned rollers provide maximum capacity. Armature is positively stabilized and held in proper position in the motor frame. Has M-2 Cage—same as pinion end bearing—for easy disassembly and inspection.

Here they are—the 5 most significant improvements in traction motor bearing design, all pioneered by SKF. . .

1939 - The use of crowned rollers provided significant increases in *capacity*.

1943 - Assisted Railroads in developing "sealed-grease lubrication."

1945 - SKF's "High Capacity" design provided still more capacity in the same space. Larger, longer rollers again increased capacity without requiring more space.

1948 - Improved cage design permitted easy disassembly and reassembly for inspection of all parts.

1952 - SKF's M-2 Cage Design, applied to *both* pinion end and commutator end bearings, further facilitates disassembly and reassembly. Sealed grease lubrication now permits running up to 500,000 miles without relubrication.

Today's SKF Traction Motor Bearings are the result of these milestones of design initiative—incorporating each of these technological advances to allow for a greater capacity and a reduction in maintenance costs.

Depend, as always, on SKF's leadership; depend, as usual, on SKF's uniform quality.

SKF INDUSTRIES, INC., Philadelphia 32, Pa.—*manufacturers of* SKF *and* HESS-BRIGHT ® *bearings.*

7530

SKF

TRACTION MOTOR BEARINGS

ALLOY STEEL PROBLEMS SHOULD BE VIEWED FROM 3 Angles

And that's just what Republic's 3-D Metallurgical Field Service does.

The Republic Field Metallurgist gets the first look at your problem, right in your plant. He talks to your plant and engineering staff, studies your product, examines your production methods. His report goes back to the Republic Mill and Laboratory Metallurgists.

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(*Continued from page 88*)
He later served in the traffic department of the Chicago & Illinois Midland, and as a member of a research group of Central Territory Railroads

J. T. Schenkel

C. Gordon Cruickshank

at Chicago. Mr. Cruickshank first became affiliated with the Traffic Executive Association, Eastern Railroads, as assistant to chairman at Washington, D.C., August 1, 1952, and was appointed vice-chairman of that association and chairman, General Freight Traffic Committee, at New York, on April 1, 1953.

SANTA FE.—E. E. Chapman, mechanical assistant at Chicago, retired January 31 and has been succeeded by **E. B. Fields,** engineer of tests at Topeka, Kan. **H. K. Lanning,** mechanical and research engineer at Topeka, assumes Mr. Fields' former position in addition to his present duties. **H. F. Mackey,** mechanical superintendent at Shopton, Iowa, has been transferred to Chicago.

Clifford Irby, passenger agent at Los Angeles, has been appointed division passenger agent at Fresno, Cal., succeeding **Edward Zamzow,** who retired February 1. **E. H. Crill,** agency supervisor, has been appointed station supervisor at Fresno.

L. R. Mitchell, acting trainmaster of the subsidiary **Panhandle & Santa**

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President
Republic Steel Corporation

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RAILWAY AGE

Fe at San Angelo, Tex., has been appointed trainmaster of the parent company at El Paso.

SOUTHERN PACIFIC. — F. E. Whitcher, district freight and passenger agent at El Centro, Cal., has been named assistant general freight and passenger agent at Phoenix, Ariz., while **J. E. Blackburn,** freight traffic representative at Long Beach, Cal., has been promoted to assistant district freight agent at Los Angeles. **Leo M. Ford,** traveling freight agent at Santa Barbara, Cal., succeeds Mr. Whitcher, while **N. L. Smith,** traveling freight agent at Los Angeles, replaces Mr. Blackburn as district freight agent of SP and of Pacific Electric, a subsidiary. **G. A. Thomas,** district freight agent at Santa Barbara, has been transferred to Fresno, Cal., and has been succeeded by **T. F. Hartigan,** traveling freight agent at Salinas, Cal.

Everett E. Earl has been appointed assistant to chief engineer at Los Angeles.

Russell W. Humphrey, assistant vice-chairman, system committee on insurance at San Francisco, has been advanced to vice-chairman of that committee, succeeding **Herbert I. Benjamin,** who retired January 31.

R. B. Still has been appointed assistant superintendent of the SP Transport Company at Galveston, Tex., succeeding **S. T. Helm,** who has been named terminal supervisor at that point. Named as freight traffic representative of the SPTC at Lafayette, La., is **D. R. Leonard. R. A. Lowther,** superintendent at Victoria, Tex., has been transferred to San Antonio.

B. W. Mitchell, division superintendent at Los Angeles, will retire March 31.

Howard Schuster, passenger agent at New York, has been promoted to district passenger agent at Pittsburgh. **William Sutherland** has been appointed assistant general passenger agent at El Paso, Tex.

TENNESSEE, ALABAMA & GEORGIA.—Russell E. Lewis has been appointed executive representative at Birmingham, Ala.

UNION PACIFIC. — Ezra L. Neeley, superintendent of shops at Pocatello, Idaho, has been named mechanical superintendent — Eastern district at Omaha. Appointed as mechanical superintendent—Northwestern district at Portland, Ore., is **Joseph D. Killian,** mechanical superintendent for steam power at Omaha. **Louis L. Hoeffel,** master mechanic at Los Angeles, becomes mechanical superintendent—South-Central district at that point, while **Frank D. Acord,** district foreman at North Platte, Neb., has been named to succeed him. **John H. Sinnar,** terminal master mechanic at Los Angeles, has been appointed assistant master mechanic there.

Thomas B. Collins, manager of properties at Portland, Ore., and **Frederick A. Hubbard,** assistant to general manager of properties at Omaha, recently retired. **Edward M. Wilkinson,** valuation engineer at Omaha, succeeds Mr. Hubbard, and in turn has been replaced by **Lawrence W. Lindberg.** Named as assistant valuation engineer is **Emil B. Peterson.**

OBITUARY

Leo A. Solloway, 59, general foreign freight agent of the **Canadian Pacific** at Montreal, with supervision over rates through Atlantic and Pacific ports, died February 24.

Charles Cohan, retired district freight agent of the **Monon,** died February 20.

Thomas R. Farrell, retired assistant freight traffic manager of the **Wabash** at St. Louis, died February 23 at Dallas, Tex.

A. G. Garrett, retired superintendent of the **Virginian,** died at his home in Victoria, Va., February 11.

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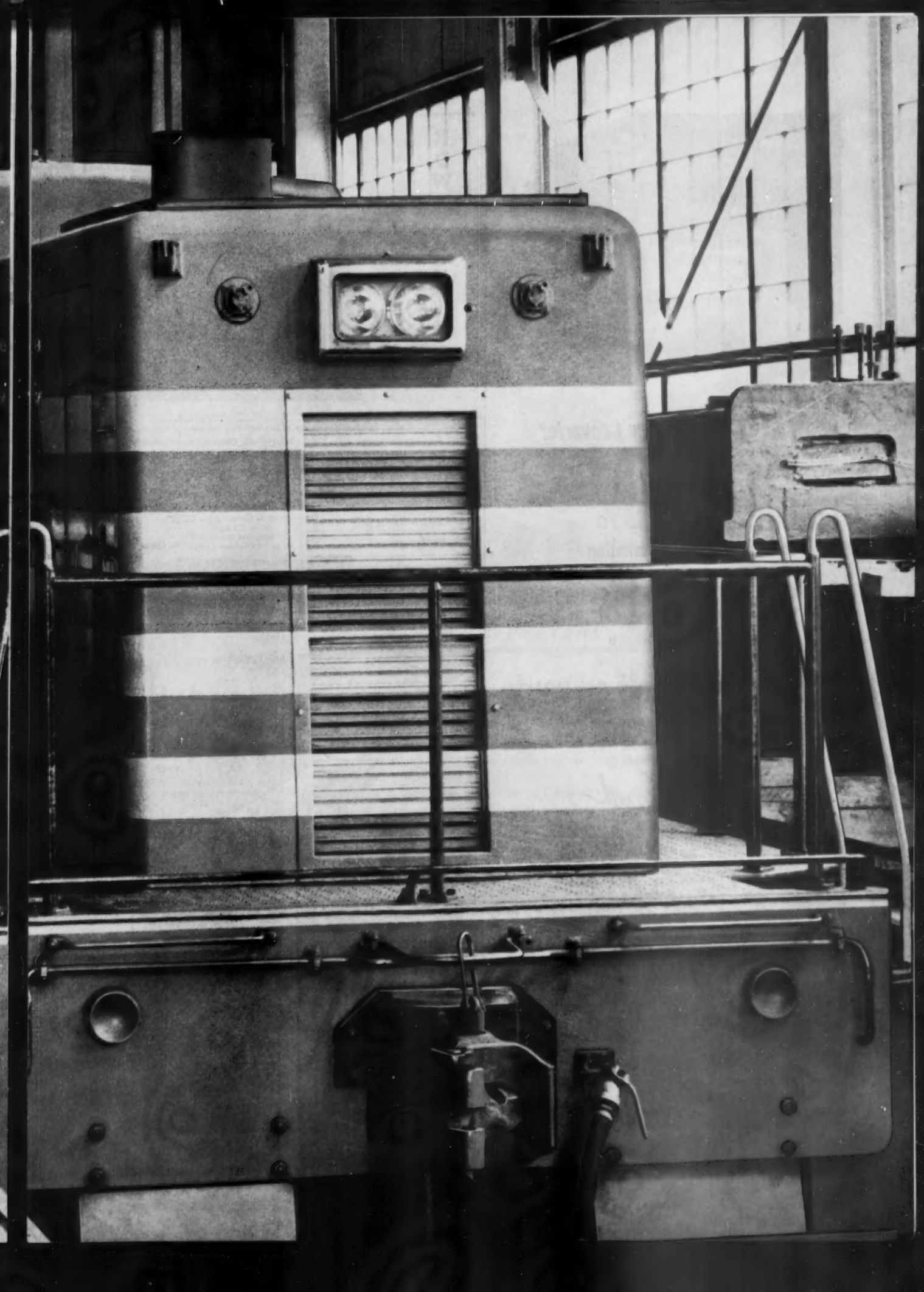

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Will receive concentrated attention in April *Railway Freight Traffic*

April is the month when "Perfect Shipping" will make the headlines wherever freight is packed, shipped and handled. "Strike Out Freight Loss and Damage" is the theme for this year's nationwide campaign conducted by the National Management Committee of the National Association of Shippers Advisory Boards, in cooperation with the A.A.R. This year's poster is reproduced above.

Railway Freight Traffic will focus the attention of Shippers on Perfect Shipping in its April issue through a special editorial program . . . including an article by the traffic manager of one of the largest shippers of l.c.l. freight. The monthly Traffic Poll also will feature a question dealing with perfect shipping.

Make perfect shipping the theme for your April freight advertisement in *Railway Freight Traffic* . . . the monthly magazine where shippers, the readers, and railroads and suppliers of related freight equipment get together.

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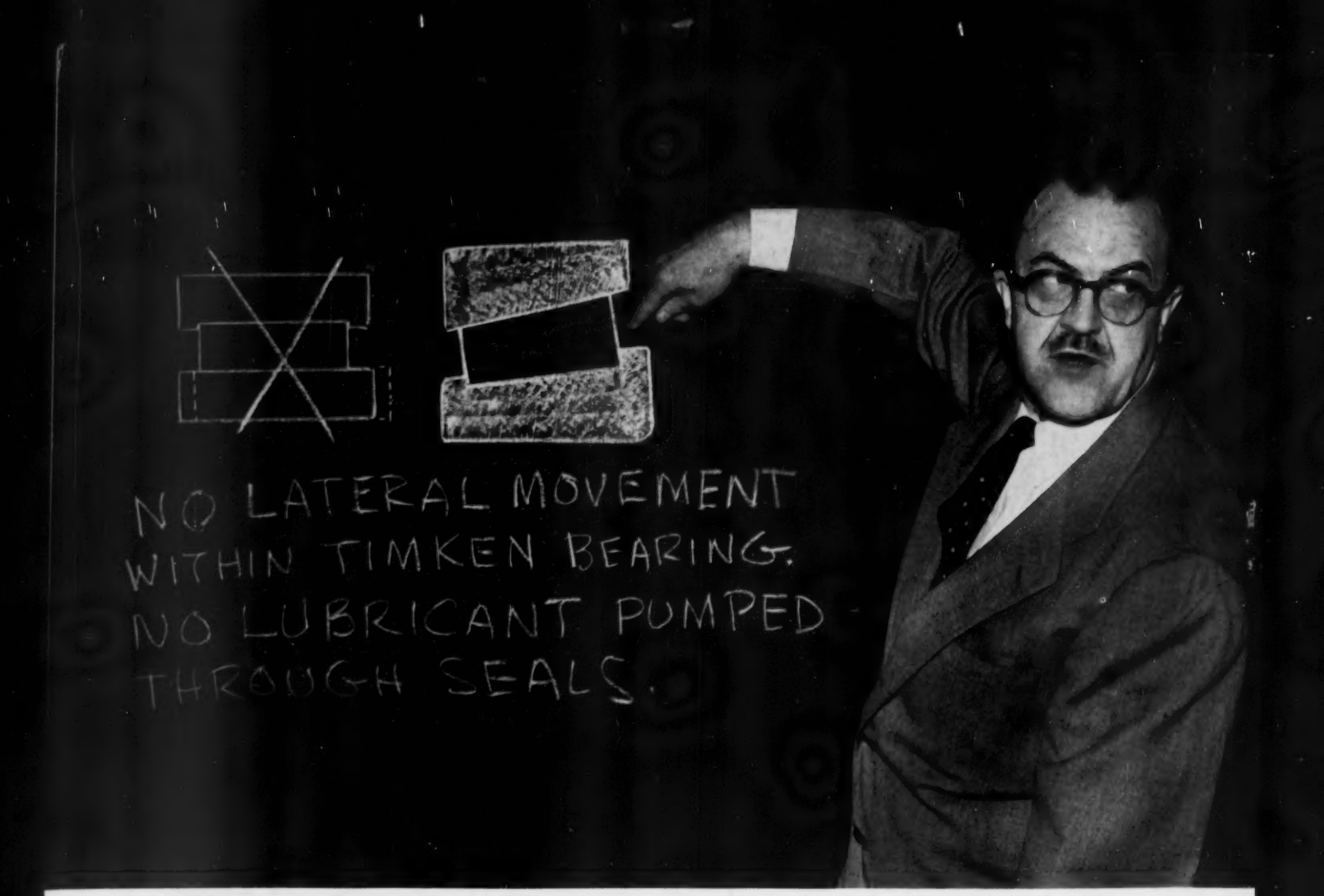

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YOU invest in roller bearings to end the hot box problem and cut operating and maintenance costs to a minimum. For two big reasons, the Timken® tapered roller bearing is the *one* bearing you can count on to protect that investment. It's the taper! Here's why:

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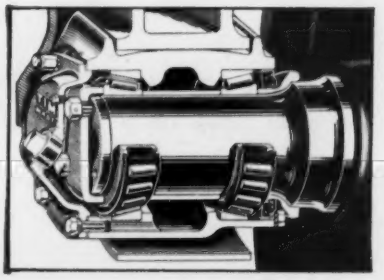

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